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THE ARCHITECTS' JOURNAL

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The Versatility of Steelwork

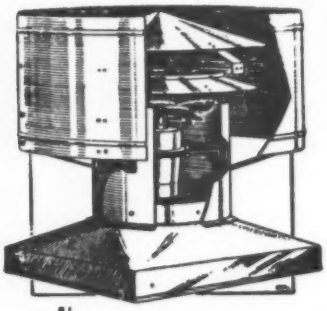
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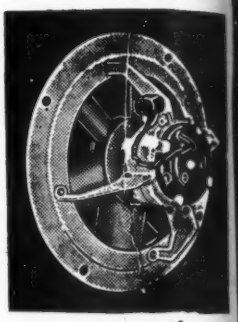
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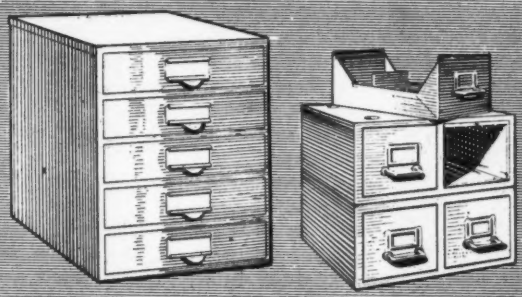


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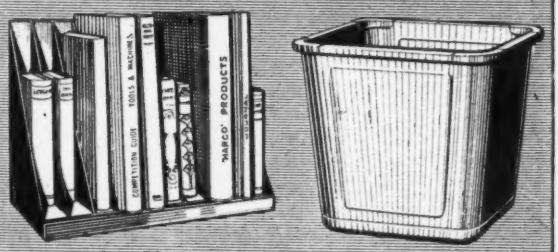
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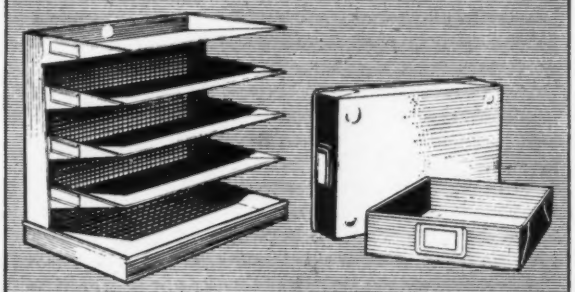
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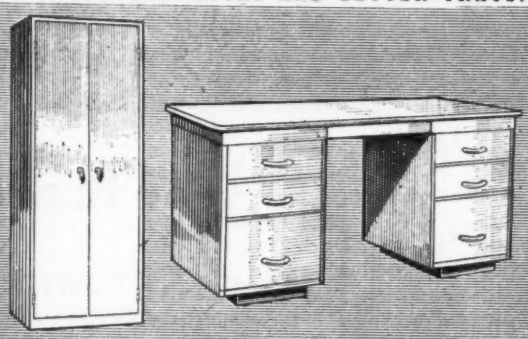
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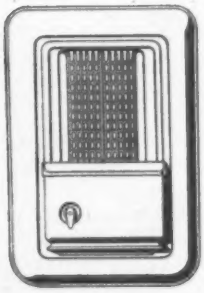
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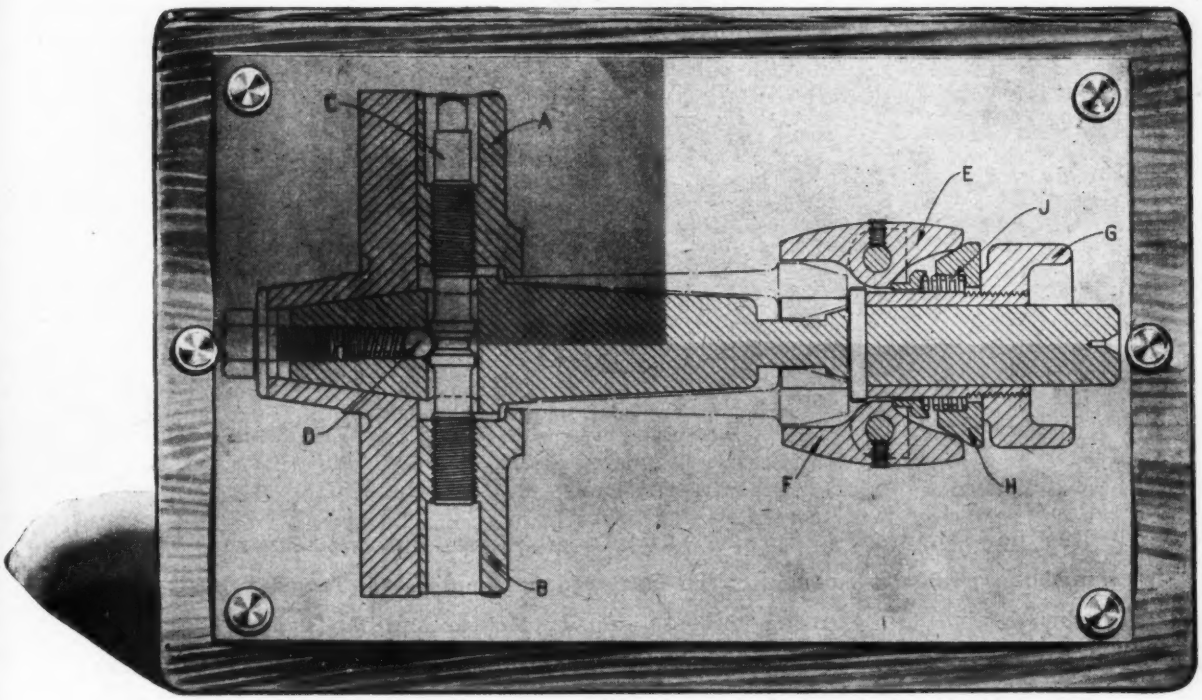
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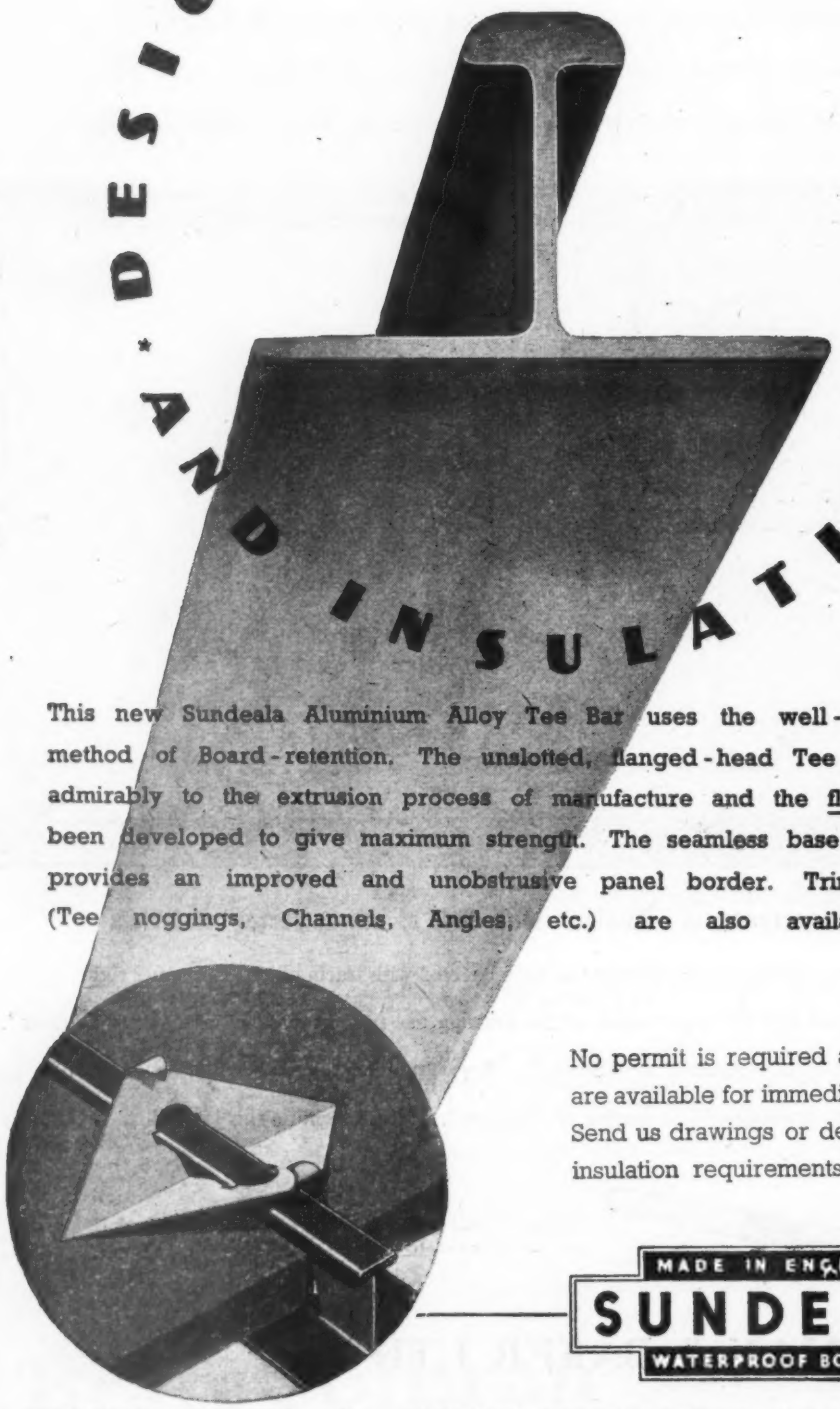
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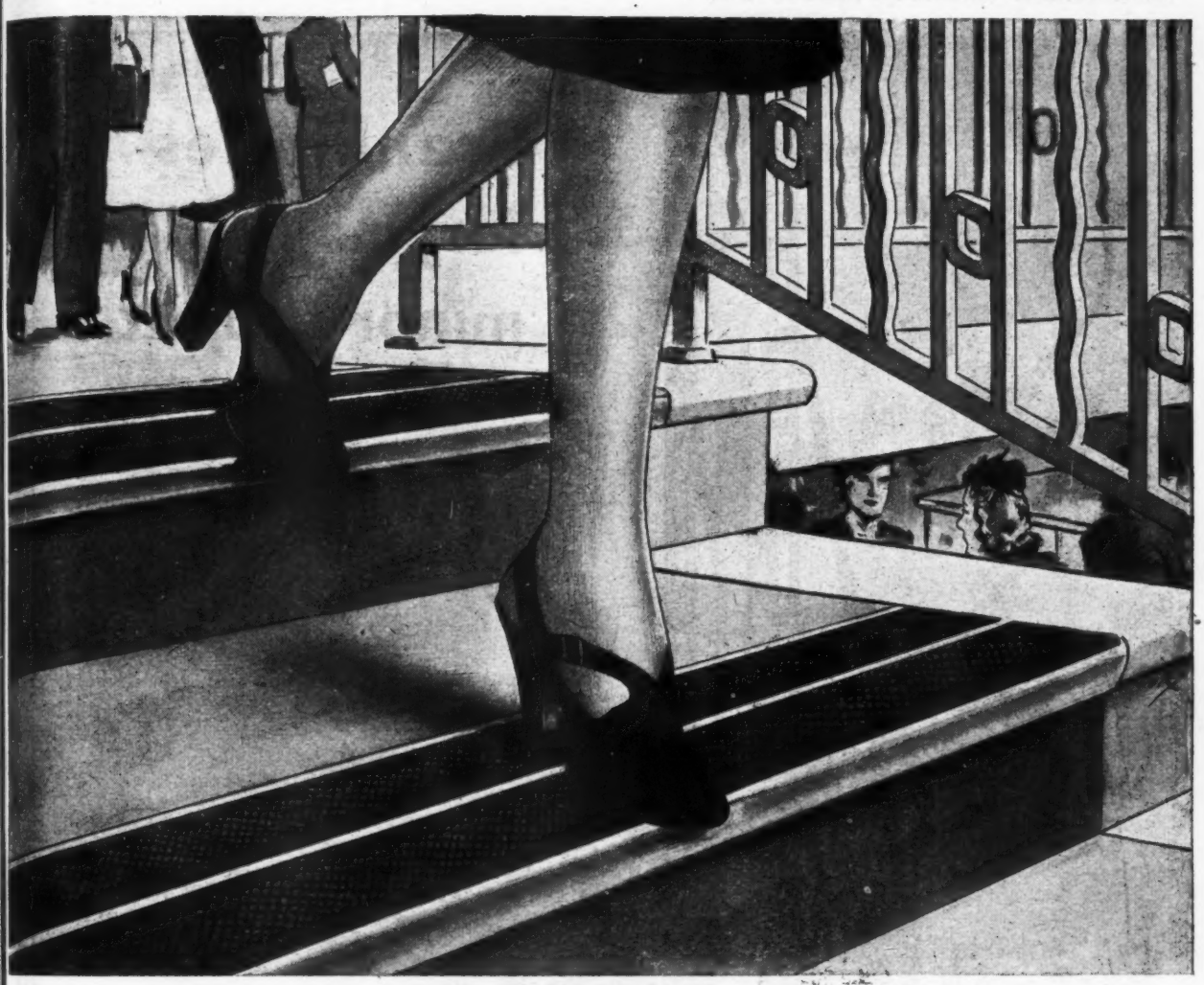


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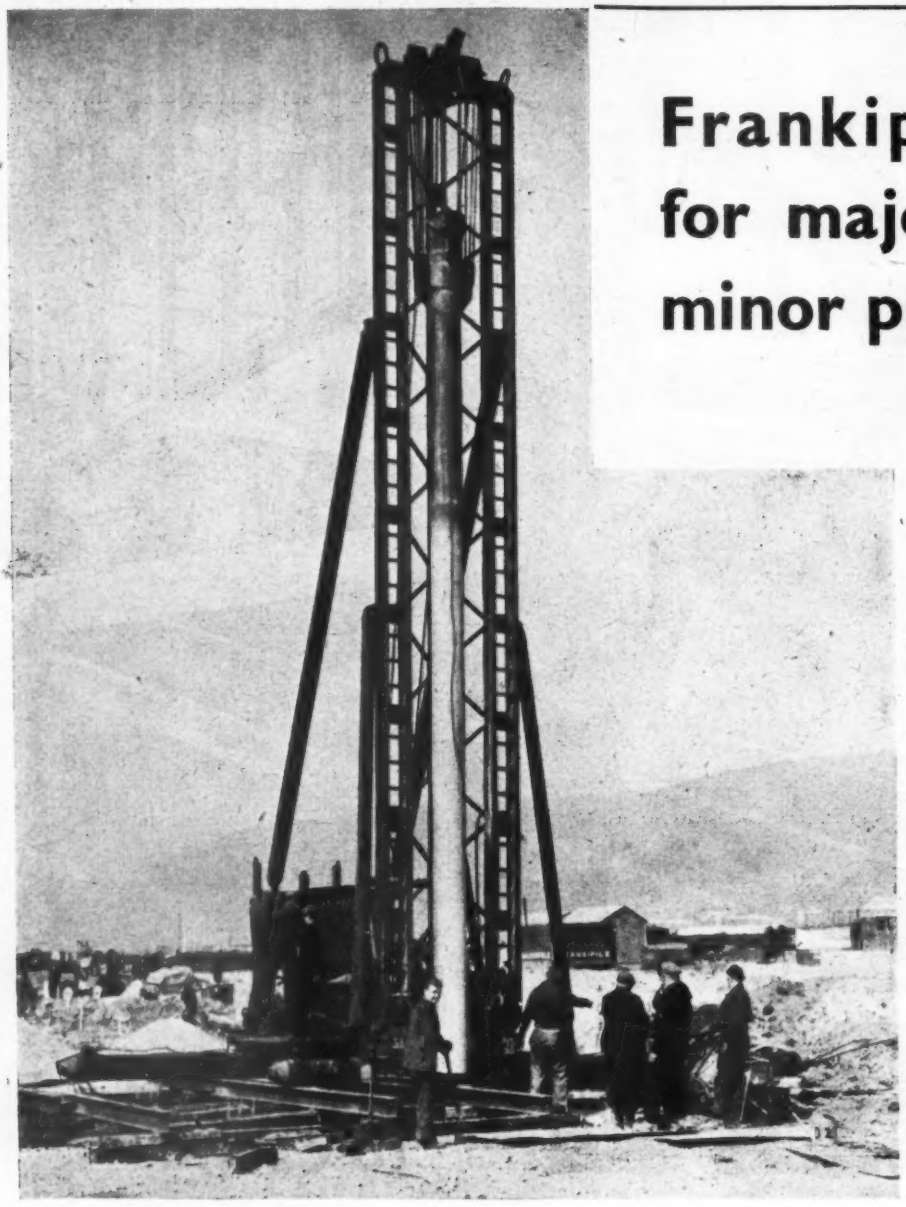
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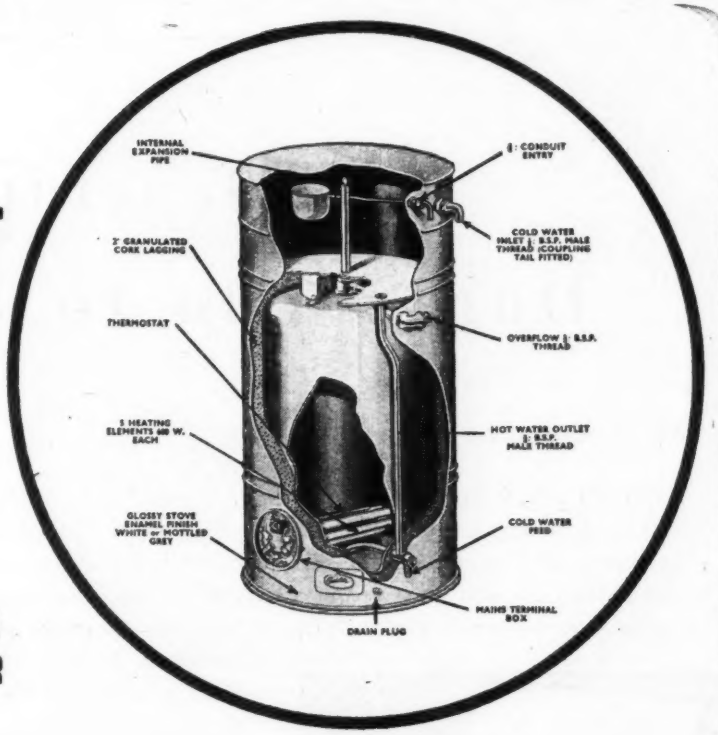
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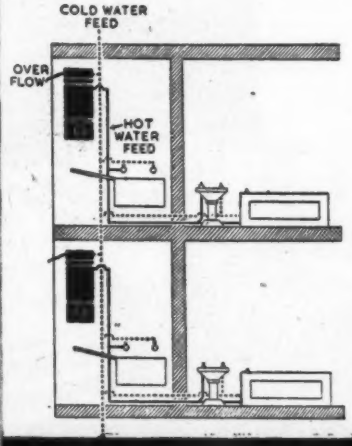
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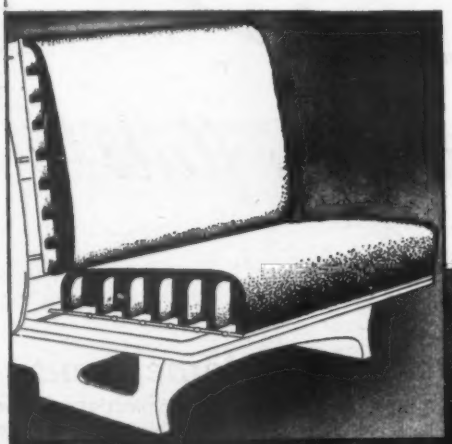
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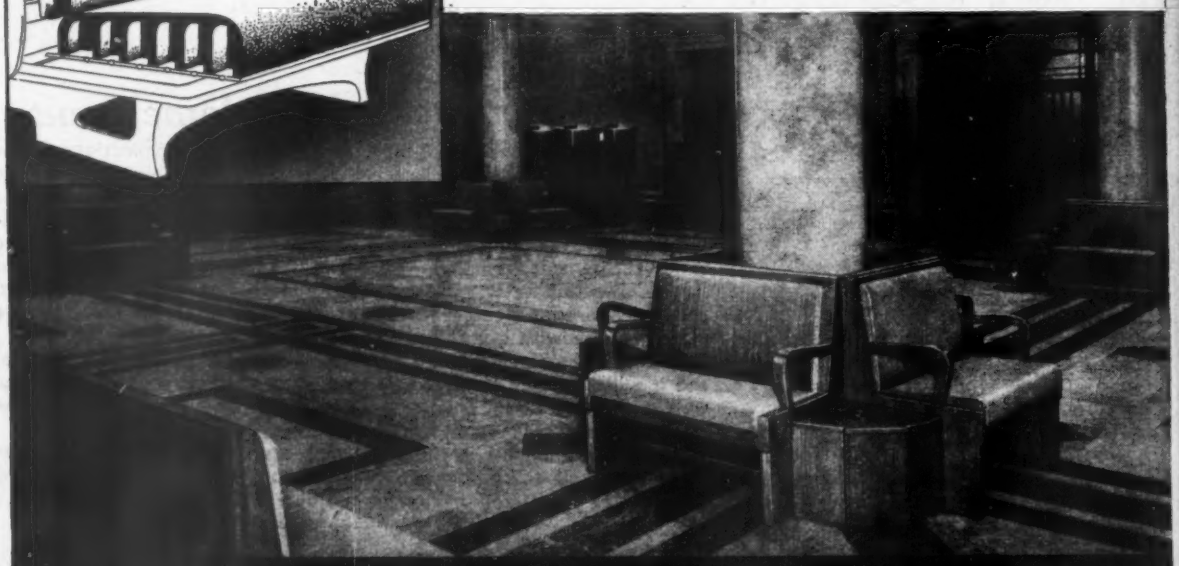
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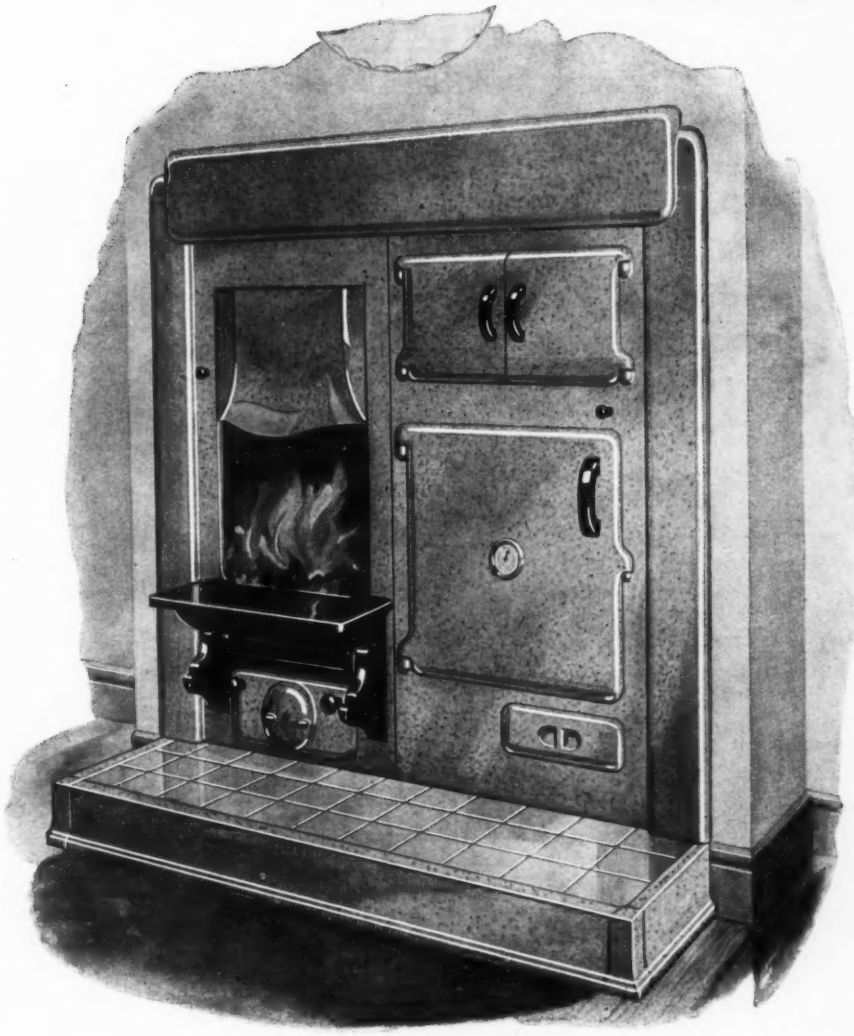
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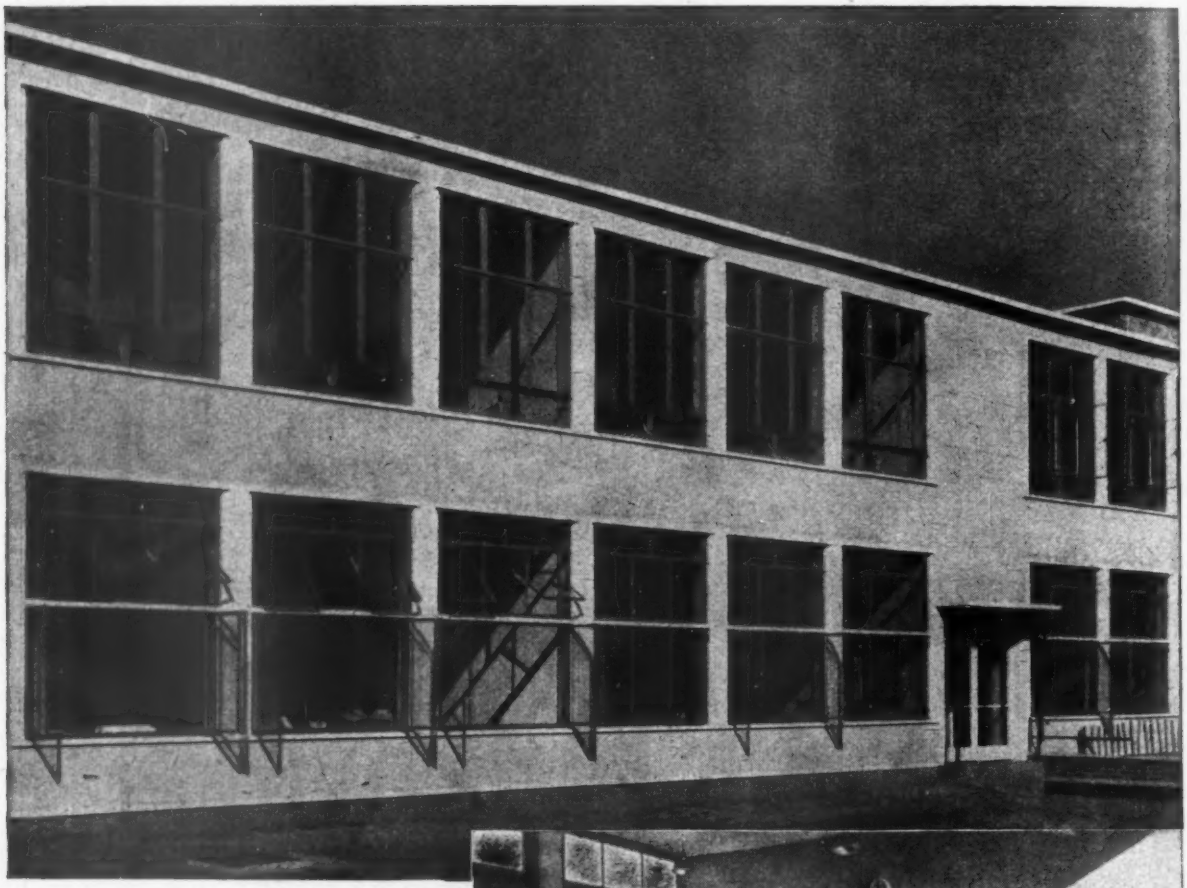
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Architect: Mr. Robert H. Matthew, A.R.I.B.A., Architect to the L.C.C.



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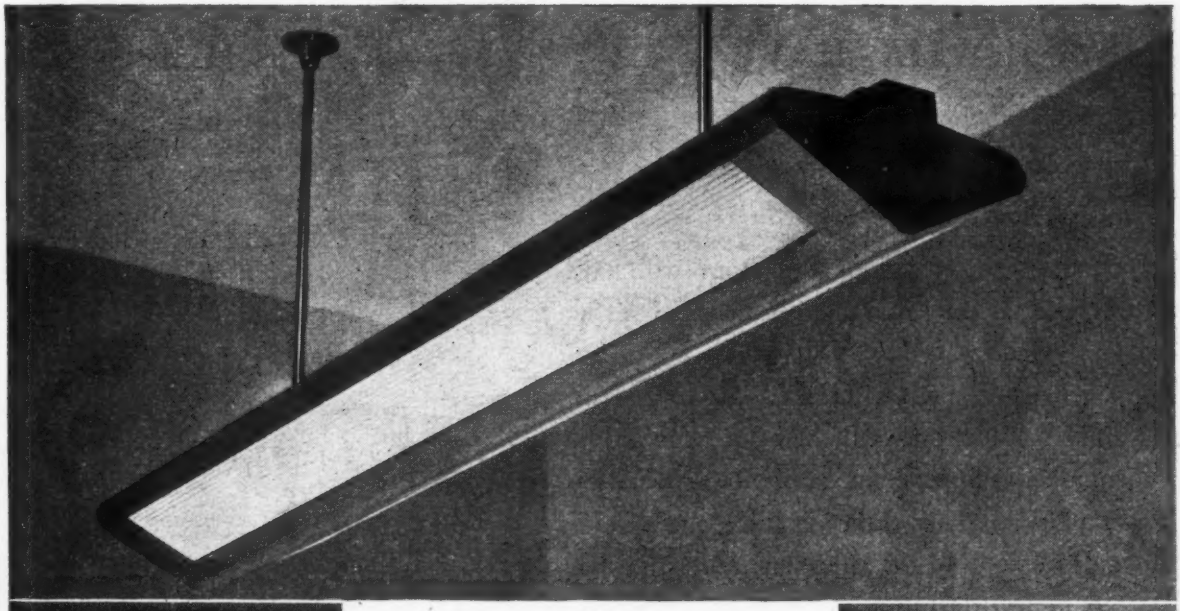
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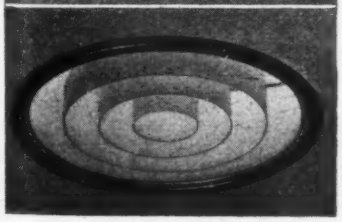
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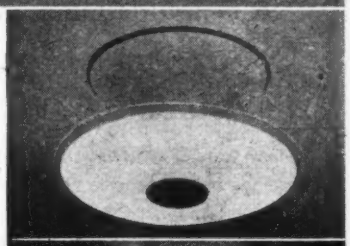


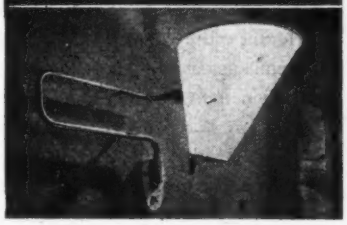
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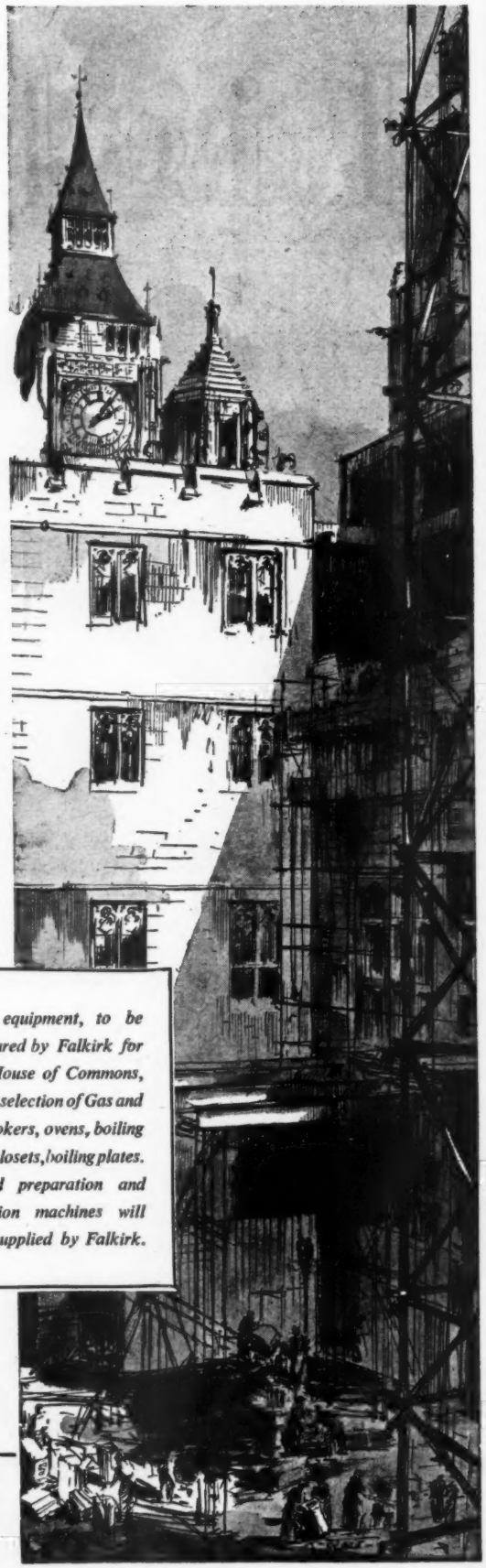
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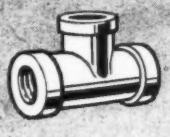
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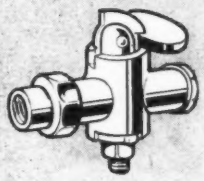
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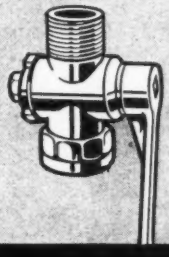
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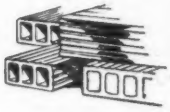
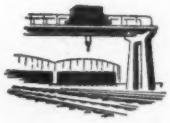
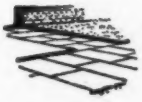
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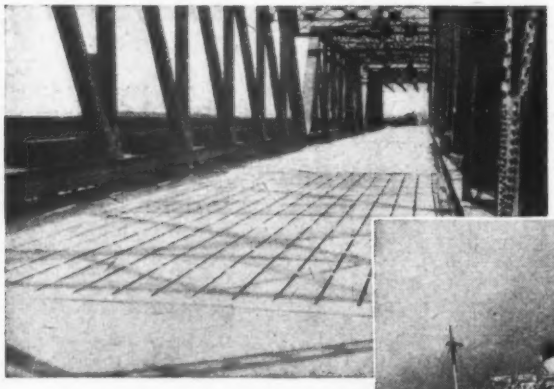
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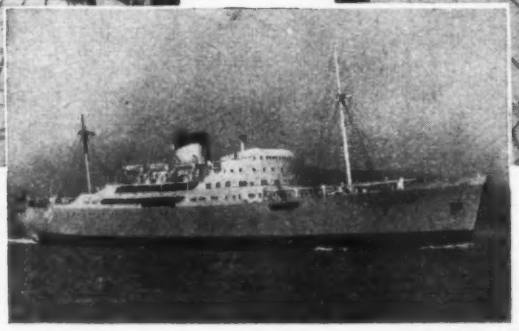
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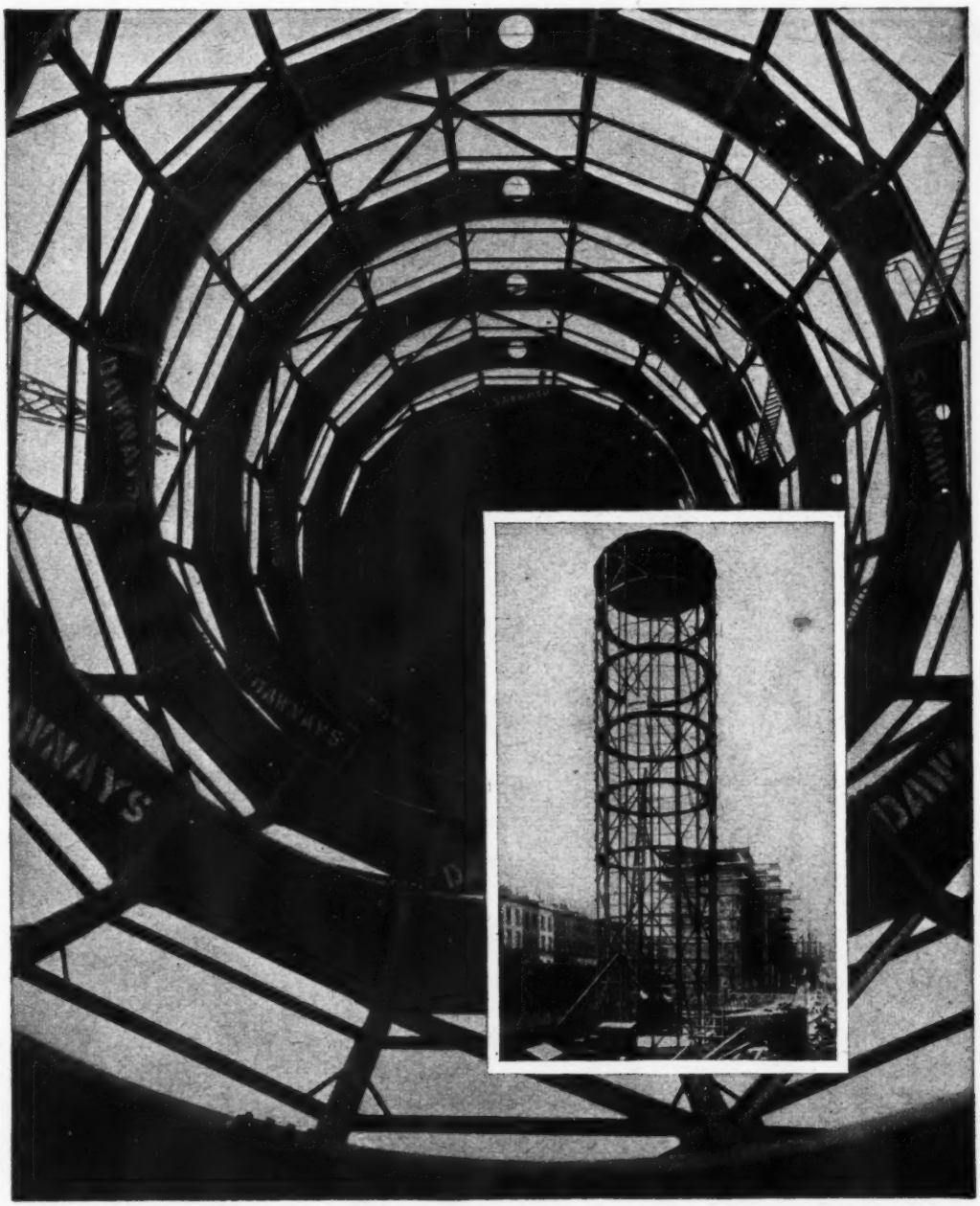
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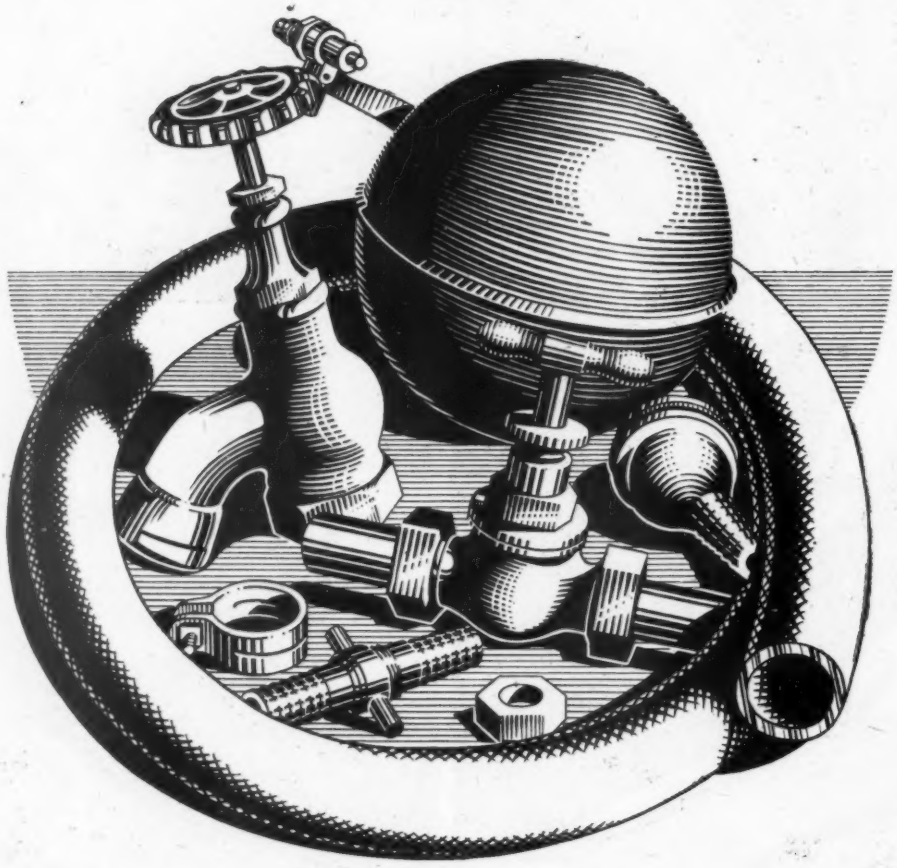
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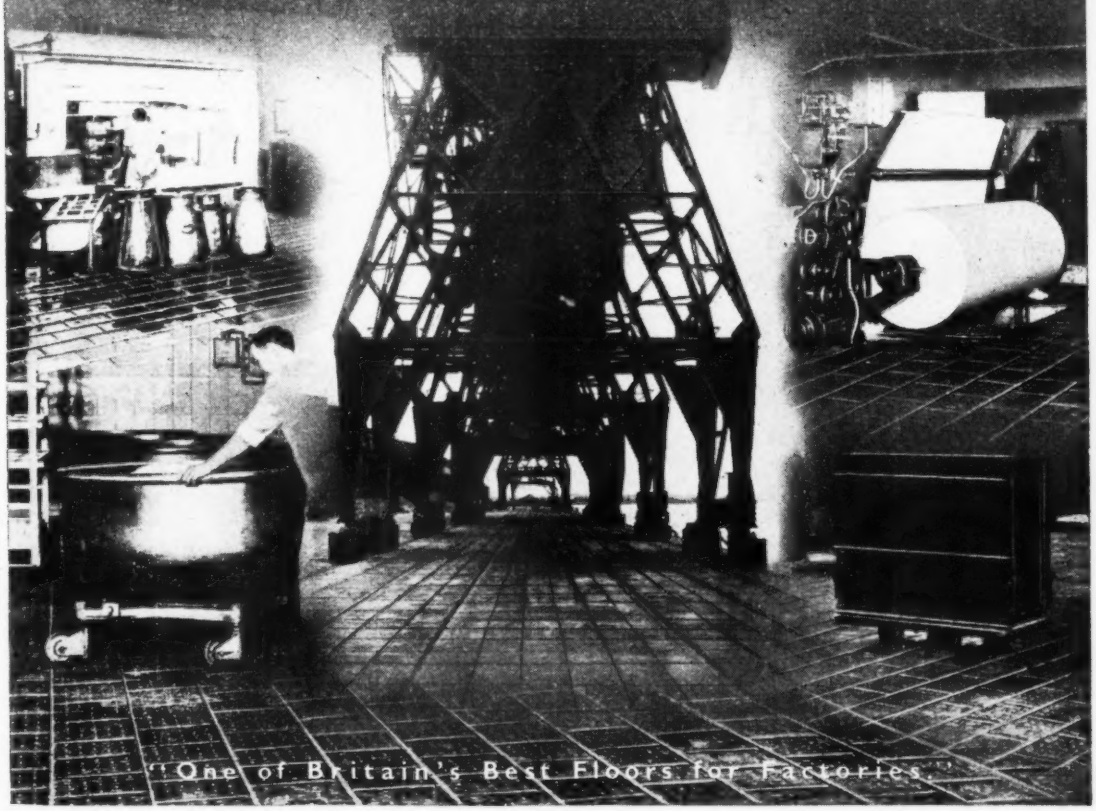
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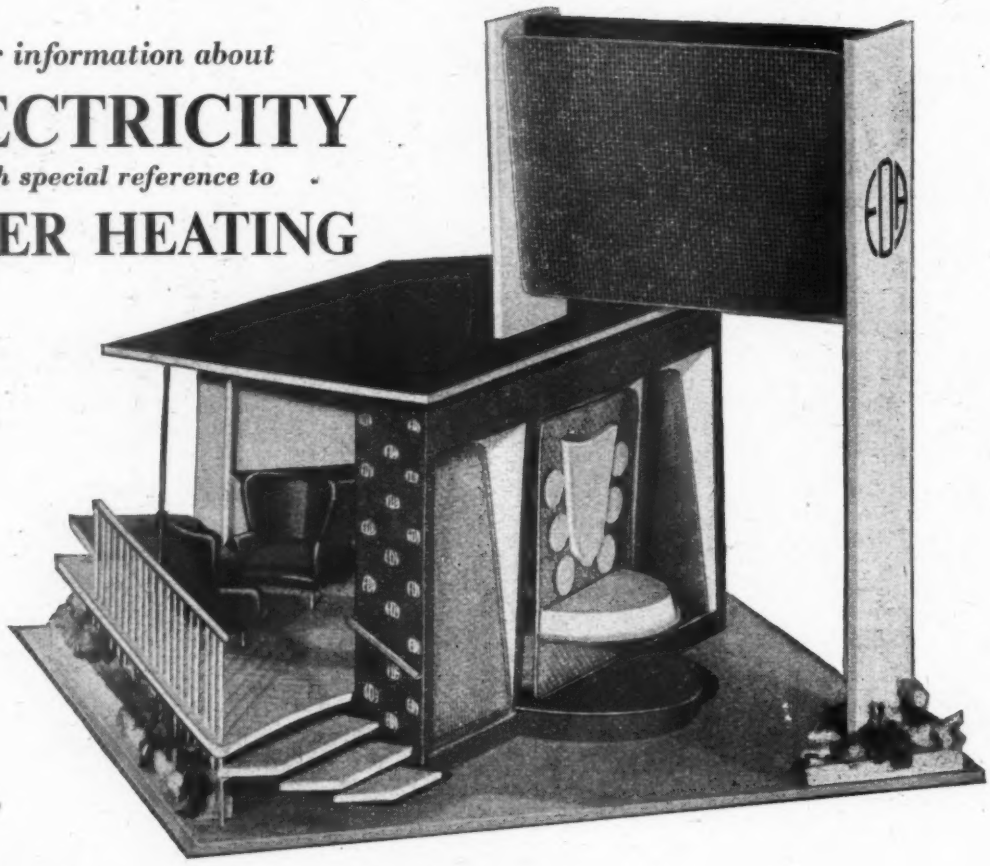
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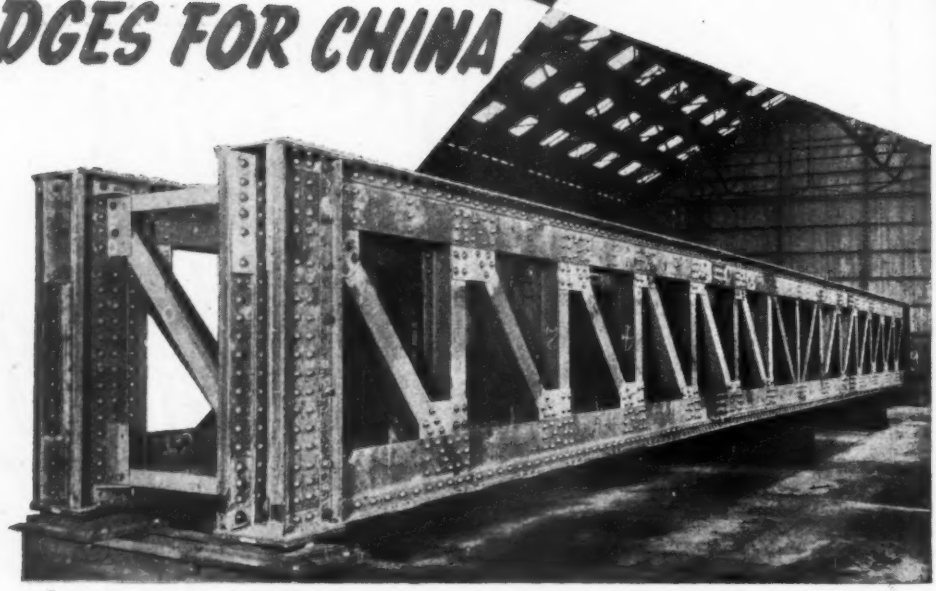
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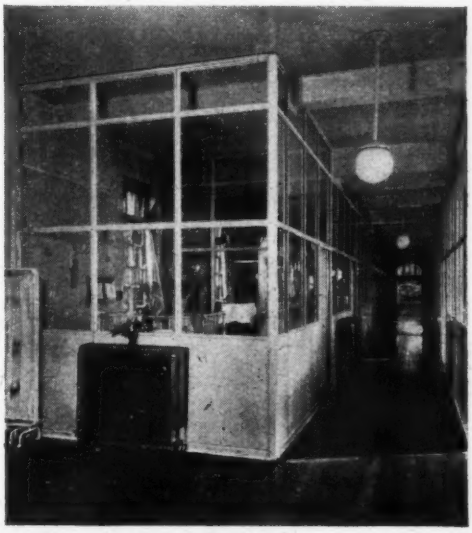
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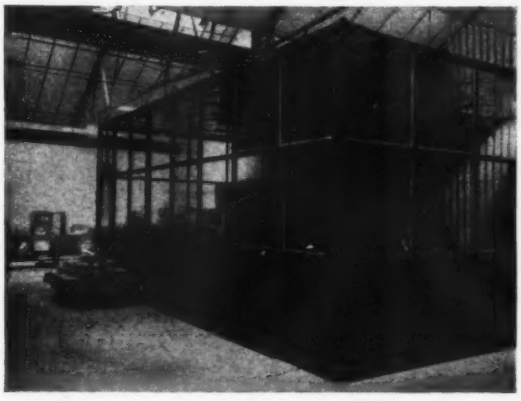
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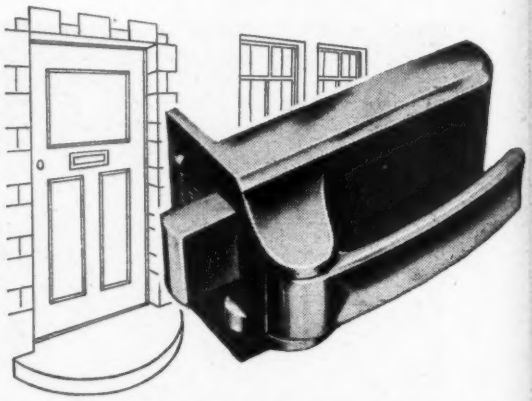
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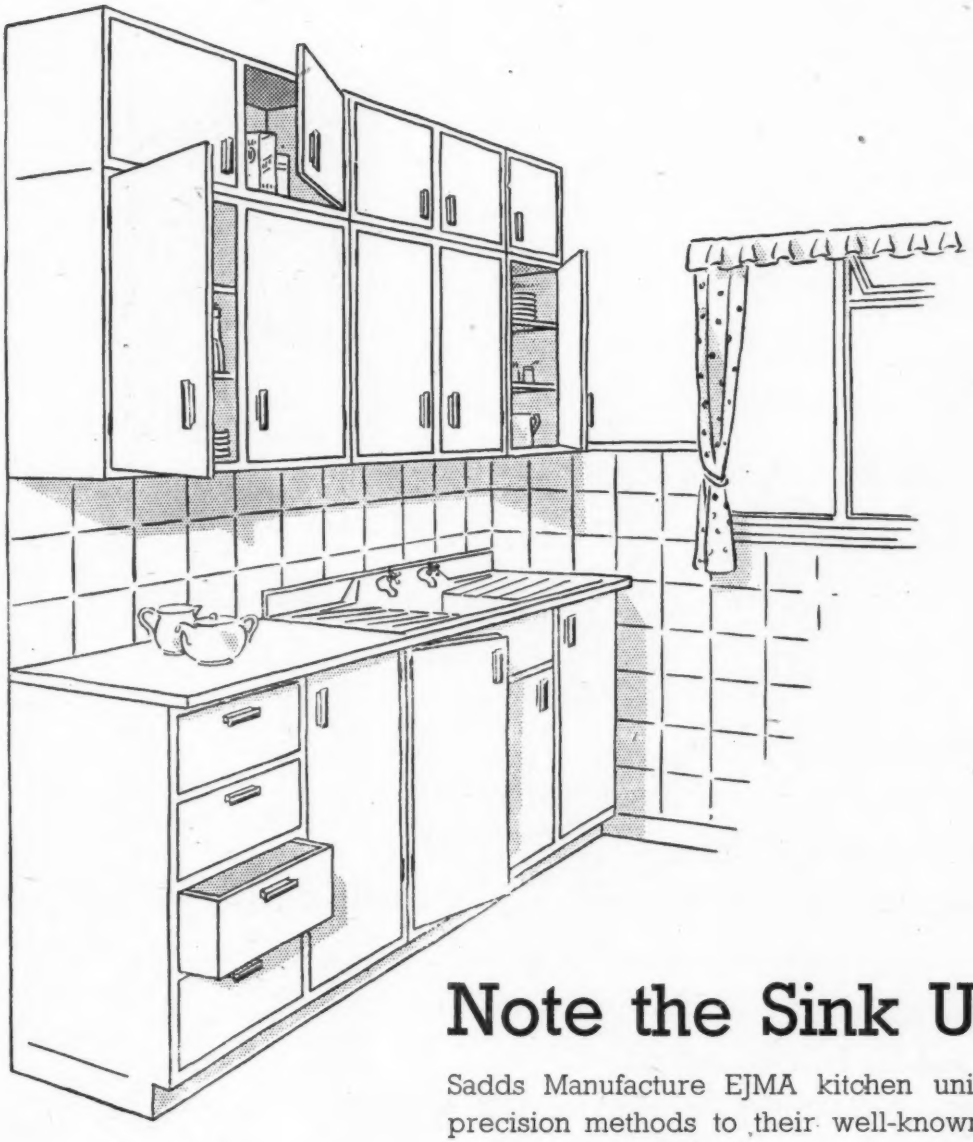
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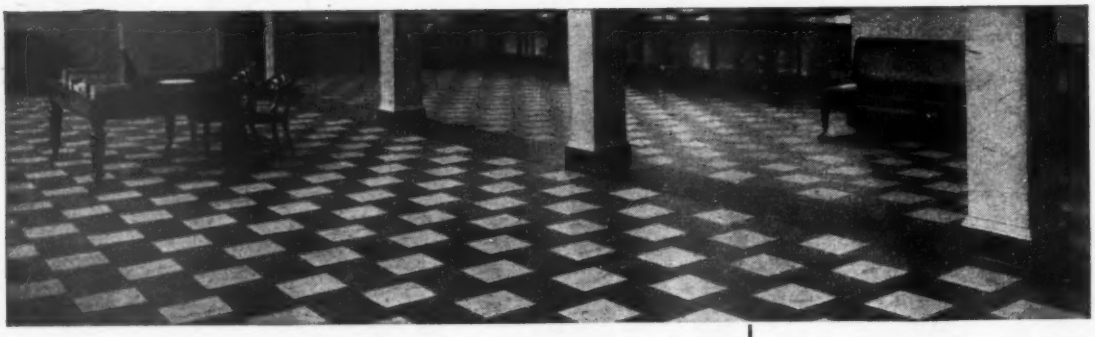
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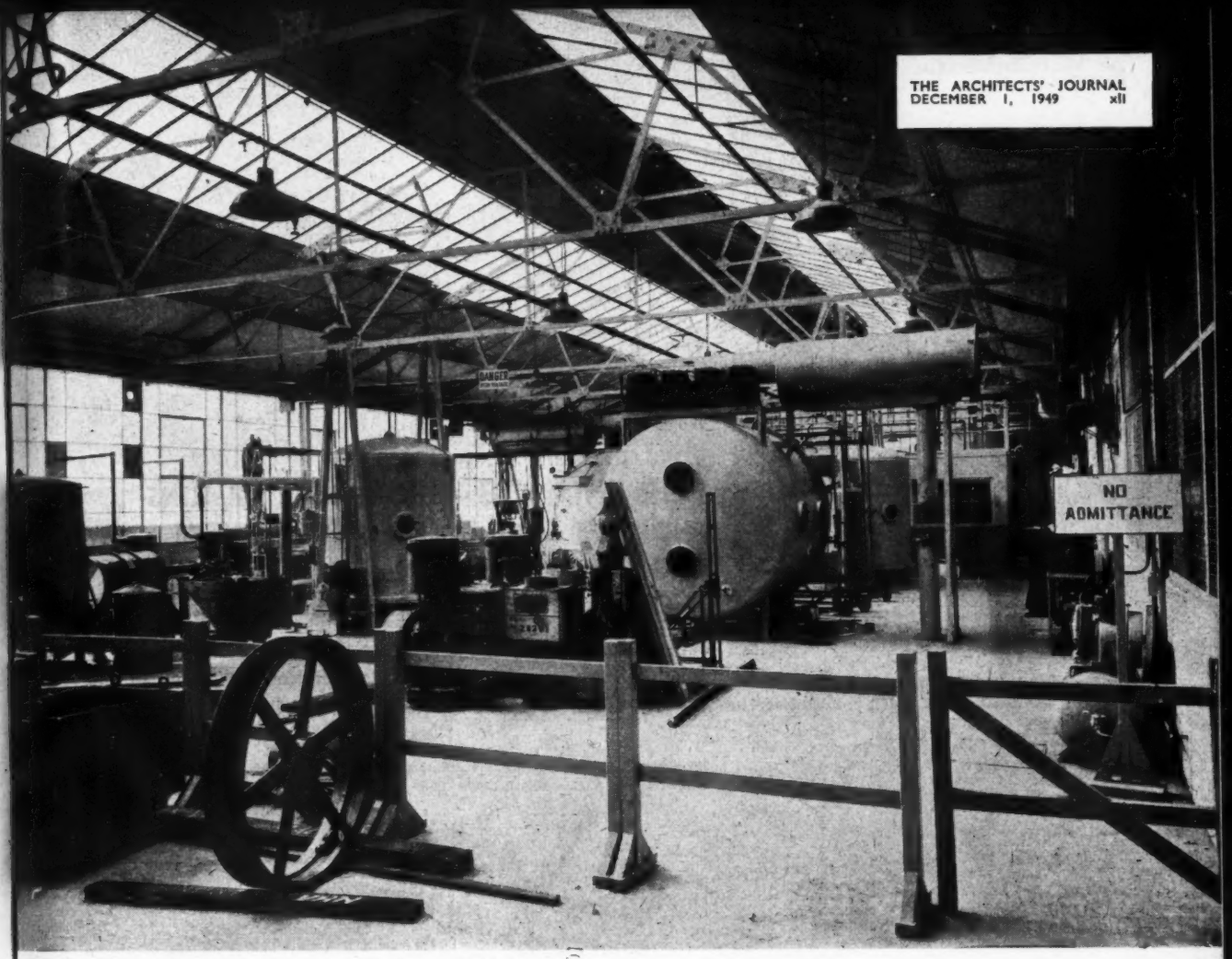
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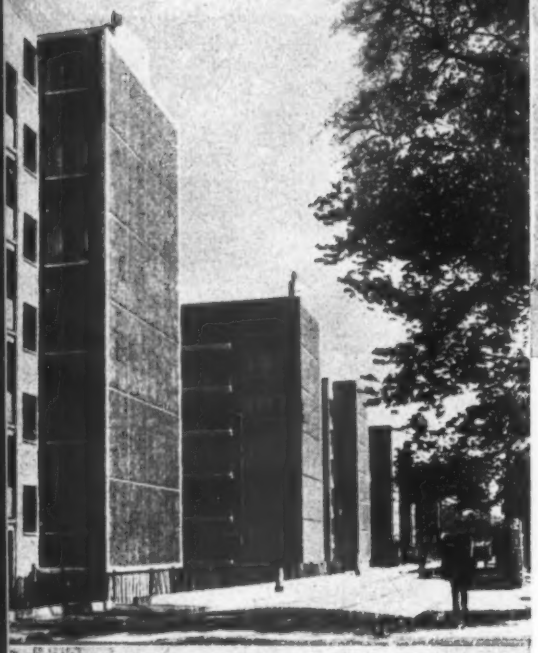


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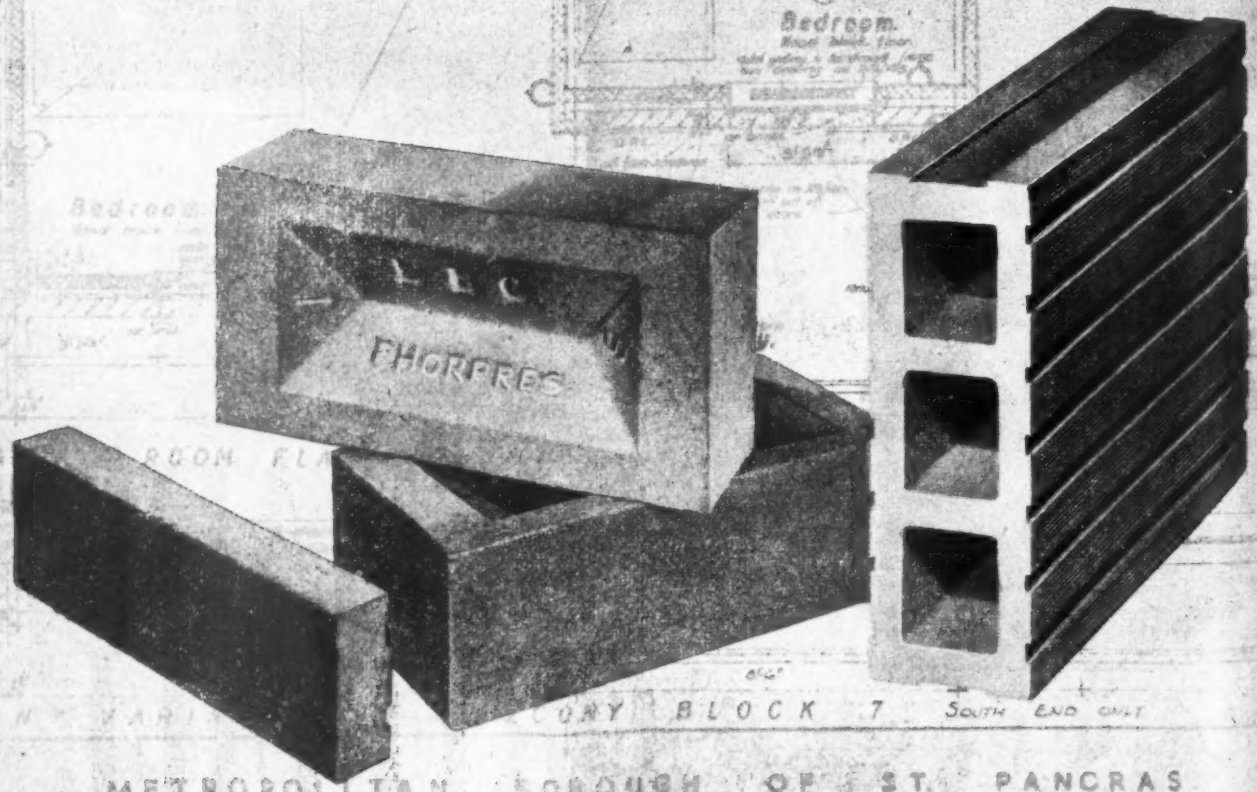
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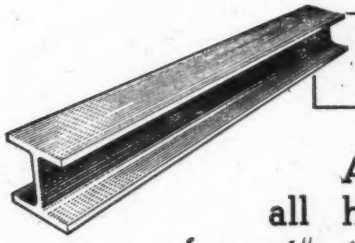
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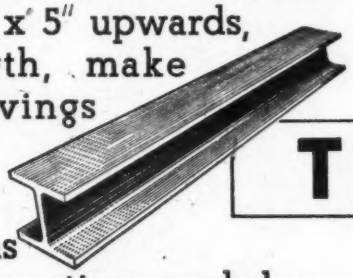
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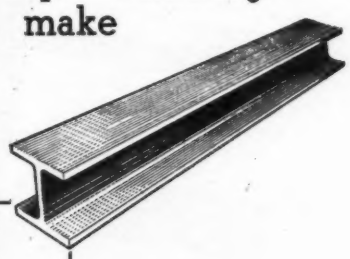
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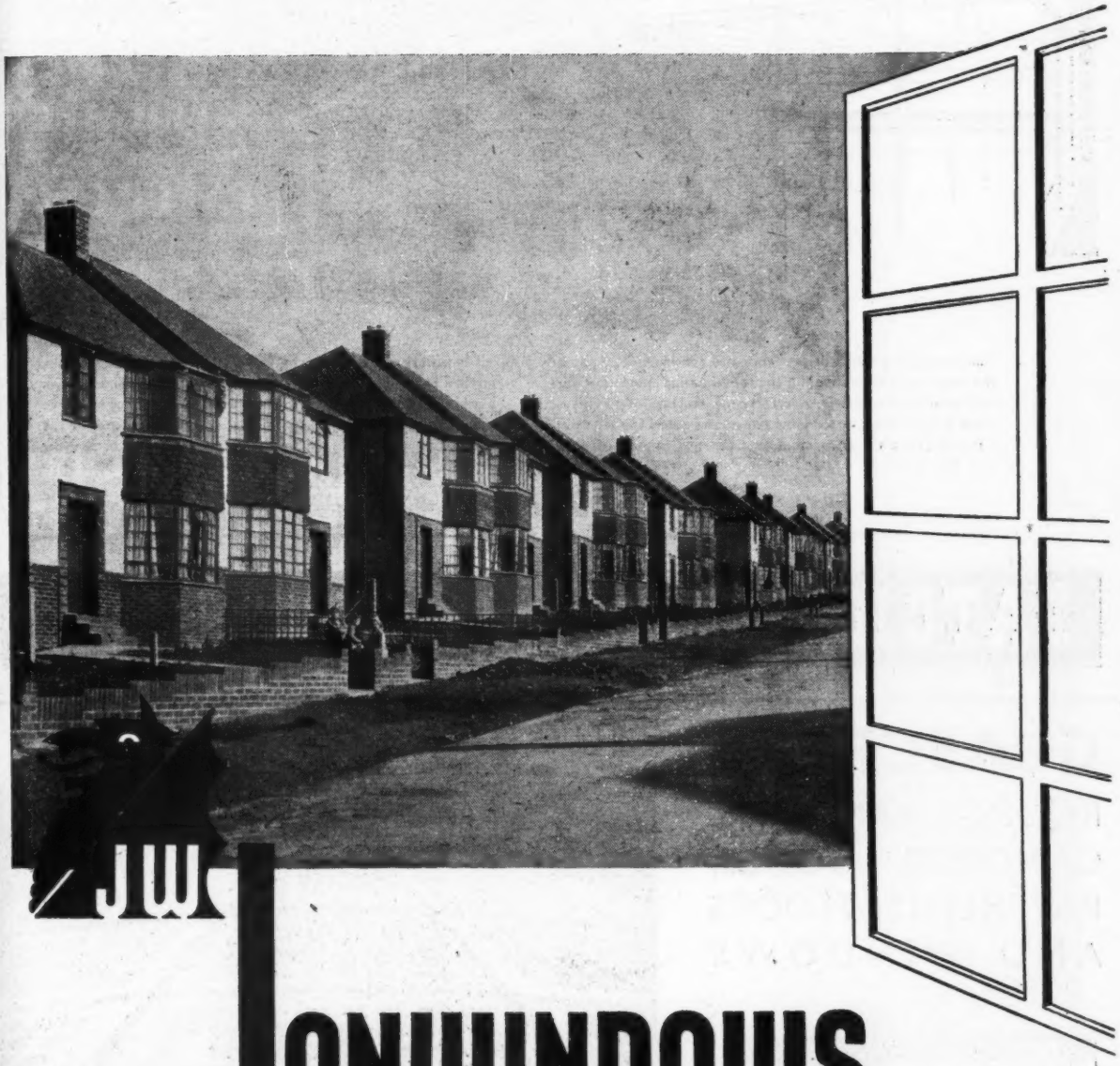
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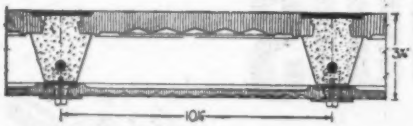
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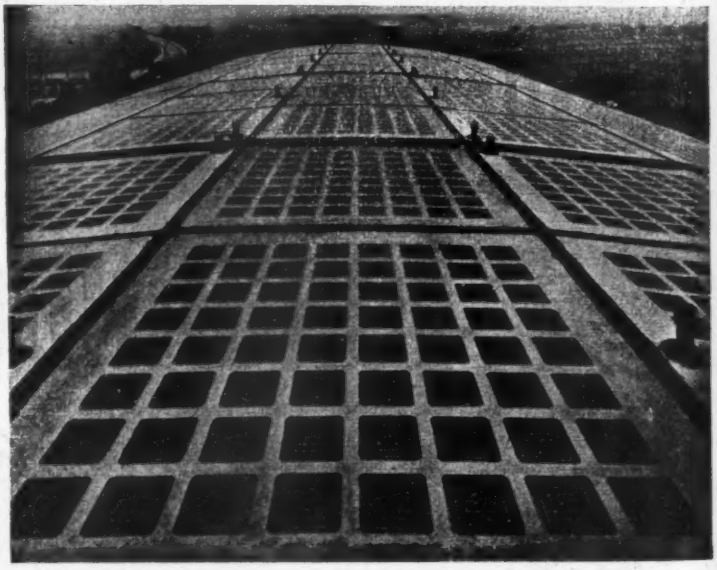
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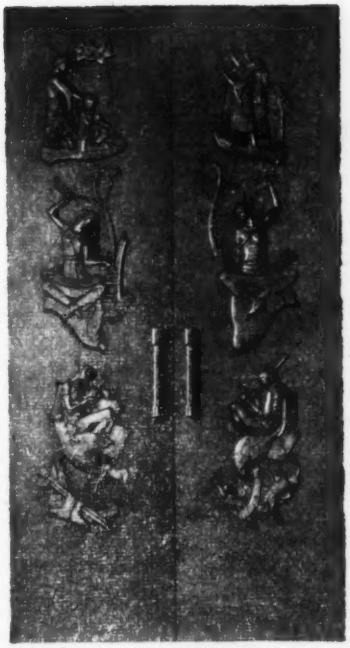
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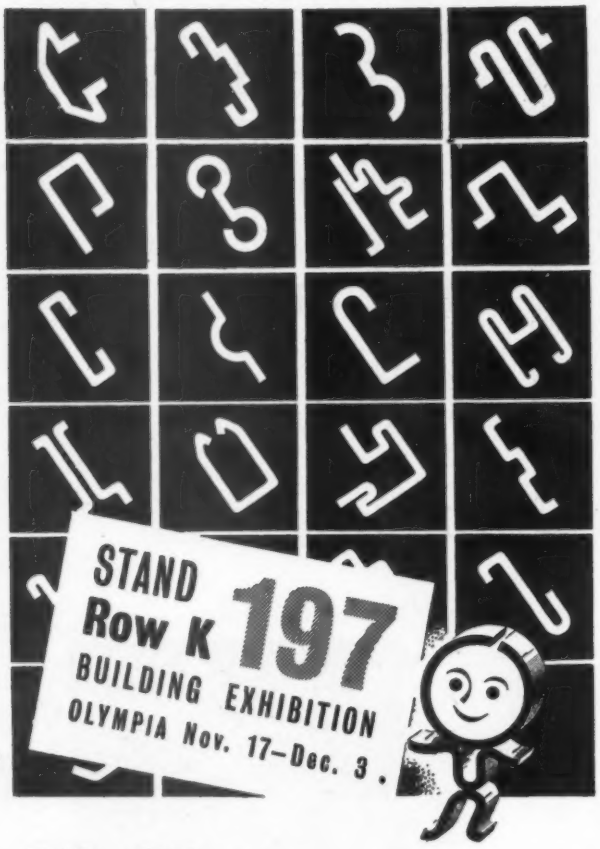
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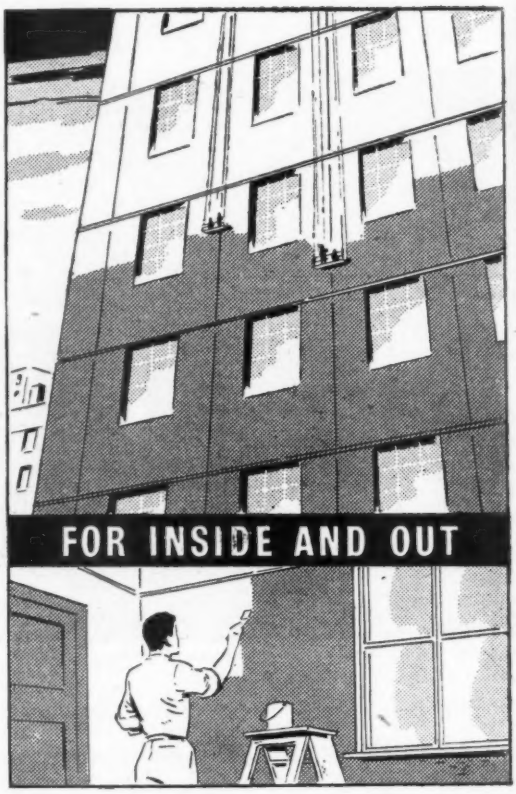
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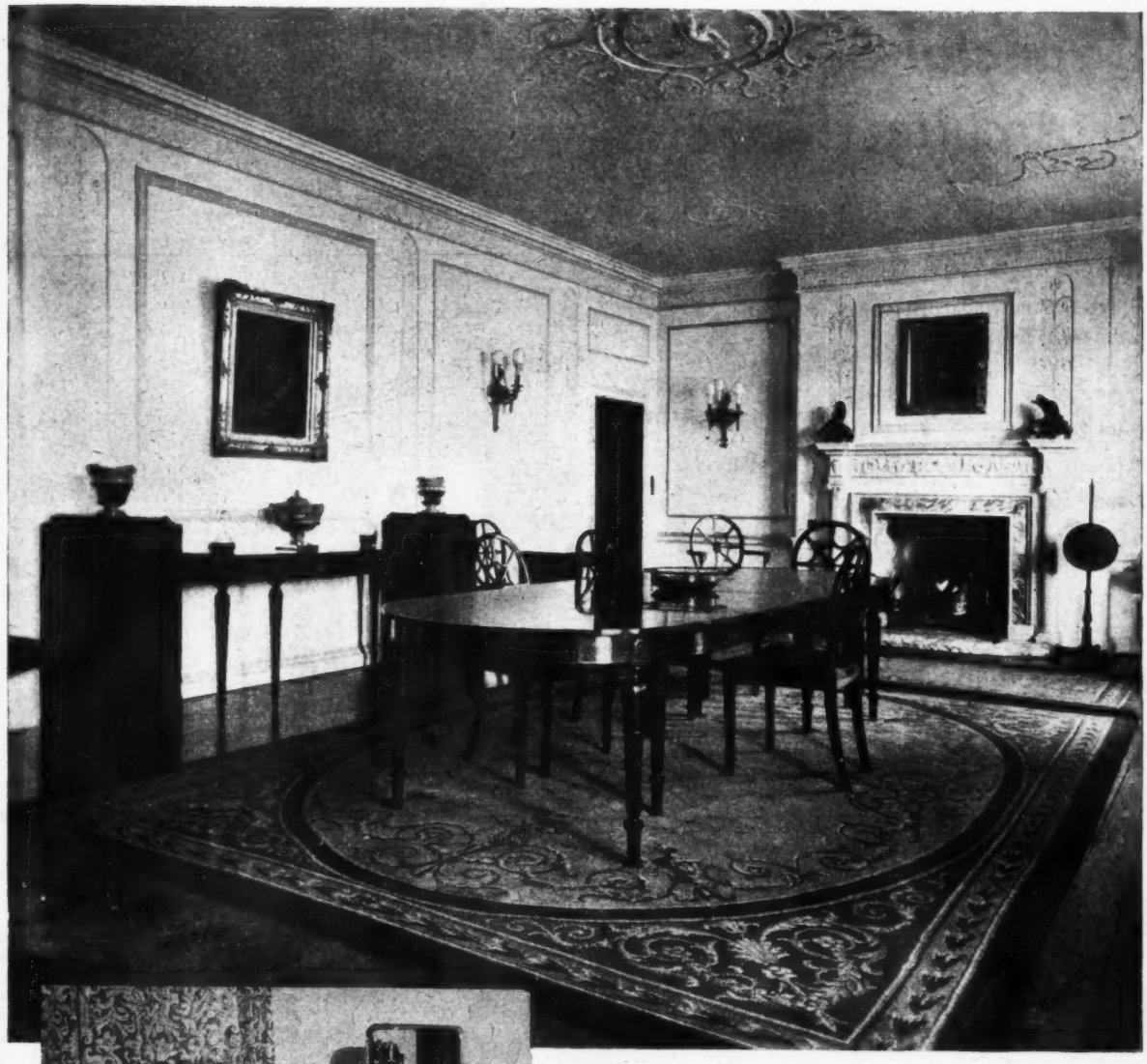
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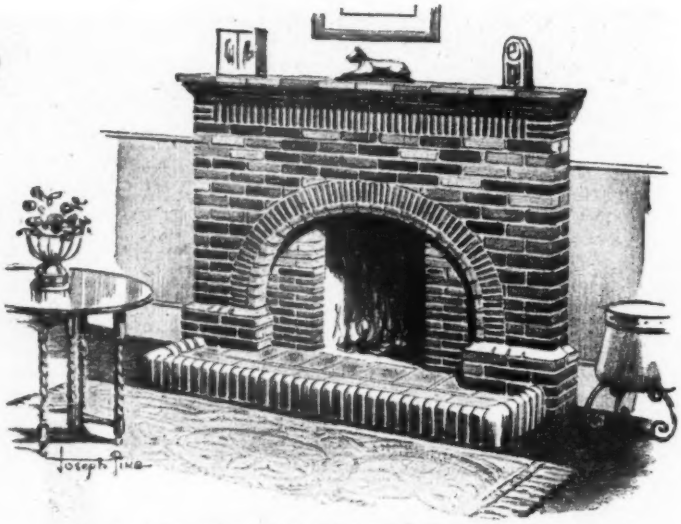
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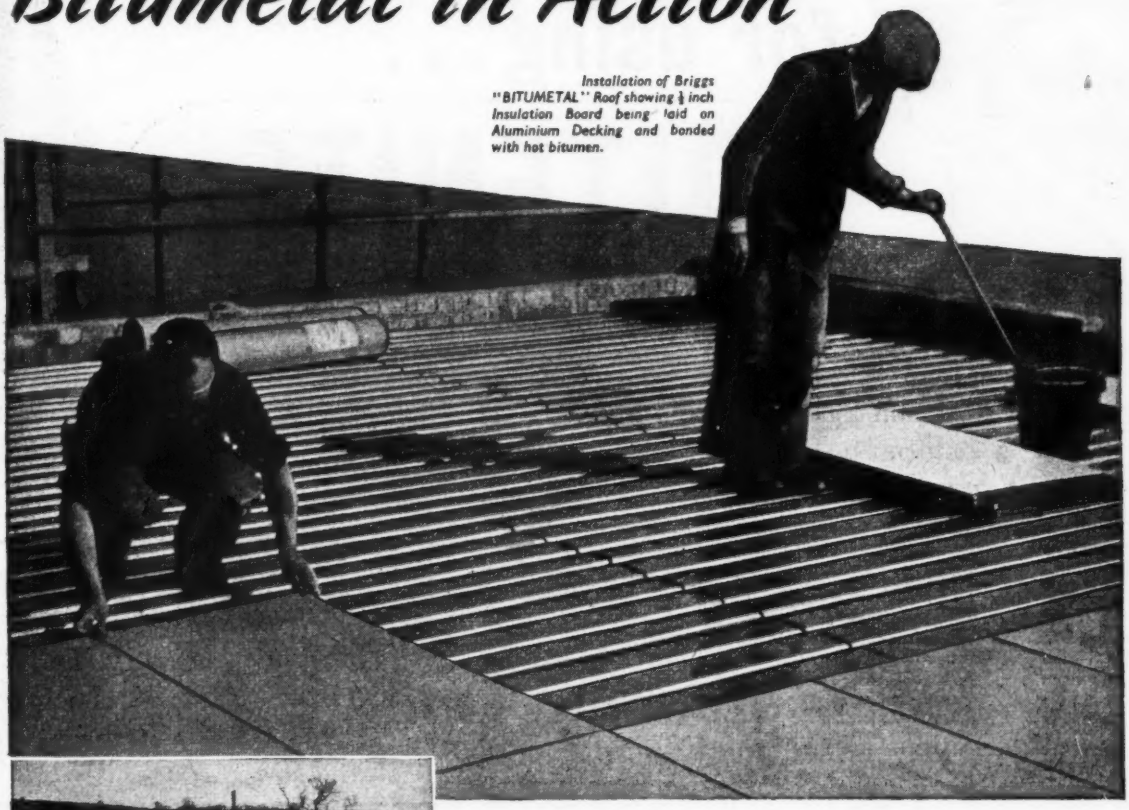
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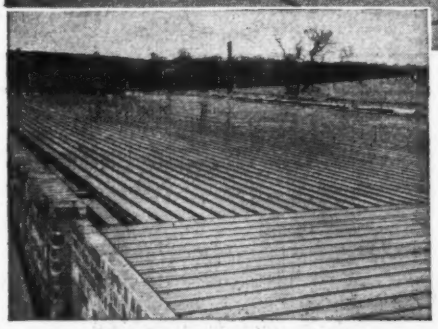
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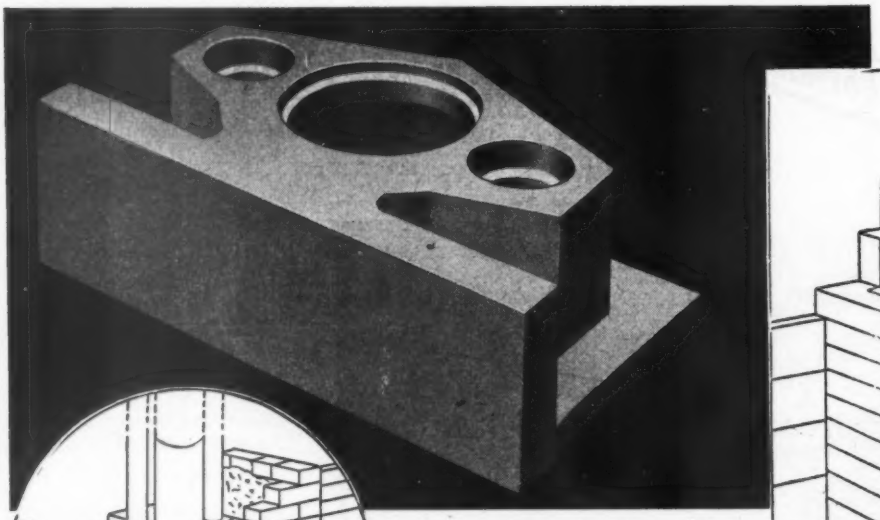
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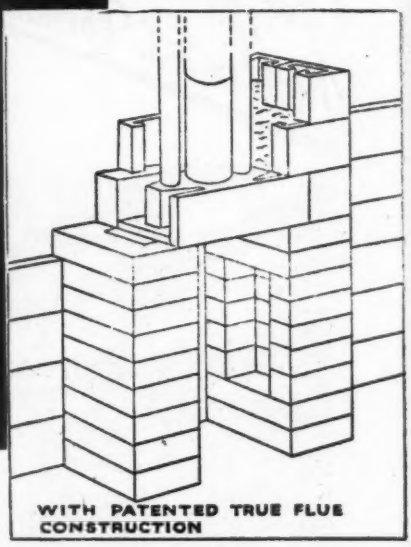
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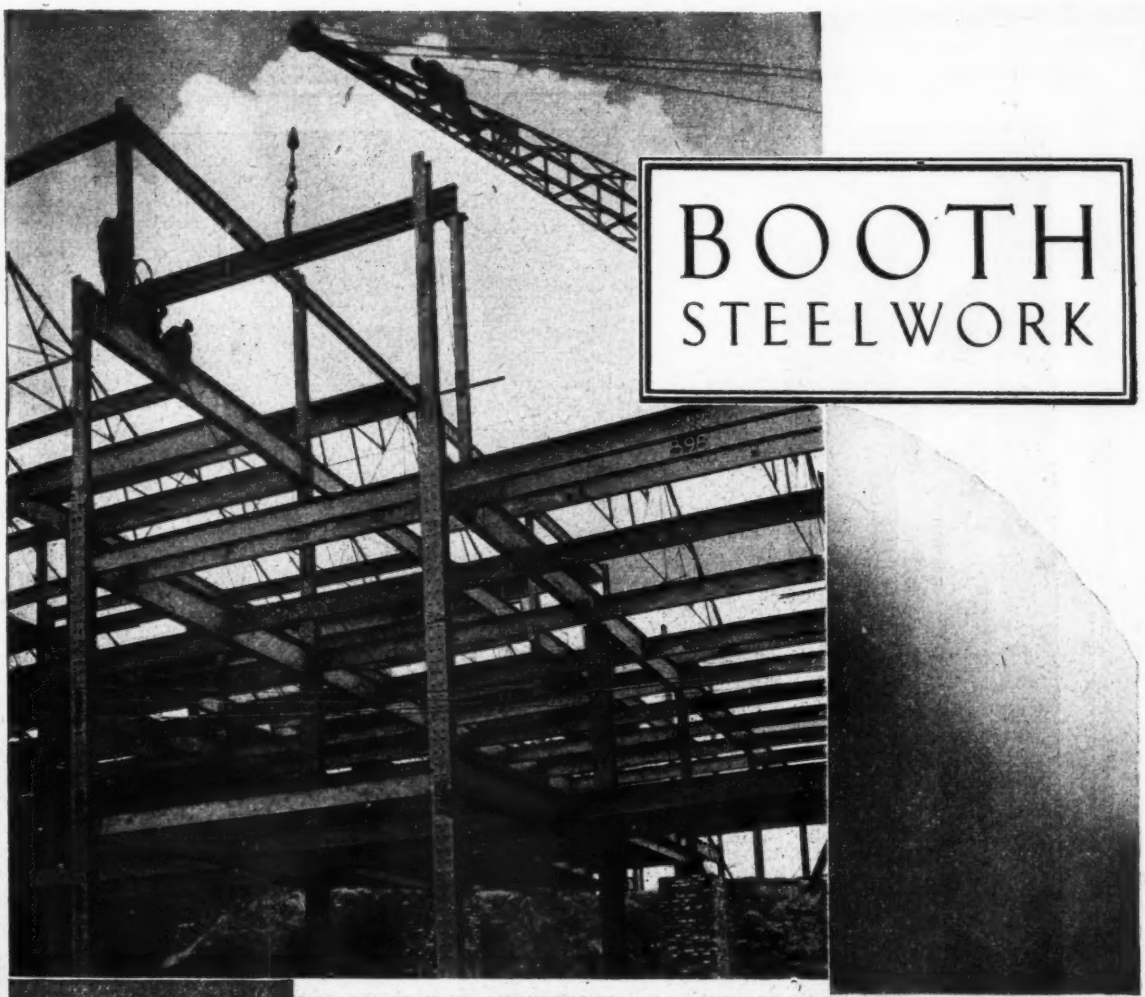
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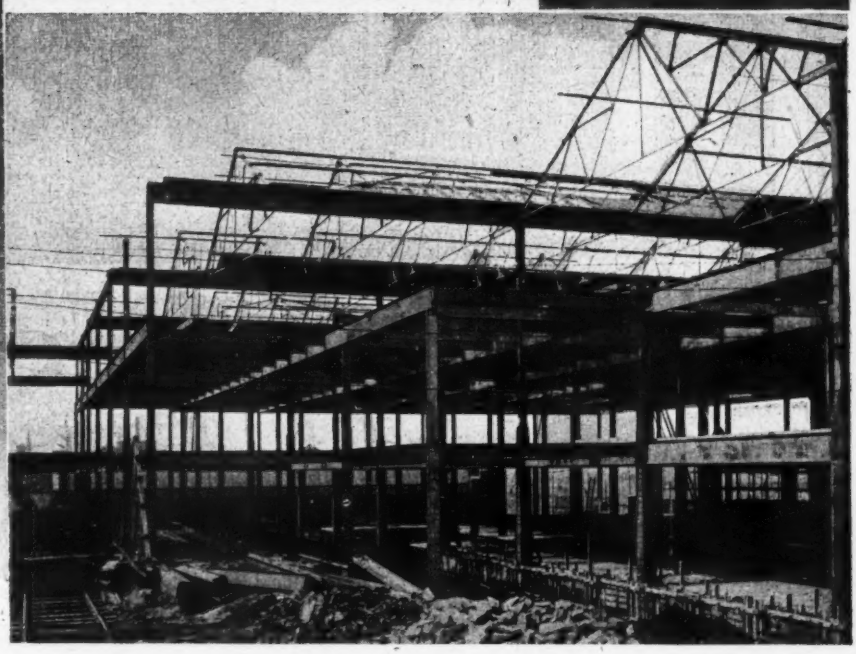
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DIARY FOR DECEMBER JANUARY AND FEBRUARY

Titles of exhibitions, lectures and papers are printed in italics. In the case of papers and lectures the authors' names come first.

BOLTON. G. D. Nash. *House Insulation.* Technical College, Manchester Road. (Sponsor, MOW.) 7.15 p.m. DEC. 1

EDINBURGH. S. Lister. *Seasoning, Preservation and Diseases of Wood.* Clerk of Works Office. (Sponsor, TDA.) 10 a.m. DEC. 2

GRIMSBY. P. L. Money. *Softwood Timber Resources.* Town Hall. (Sponsor, TDA.) 7.30 p.m. DEC. 6

GIFFNOCK. S. Lister. *Bits and Pieces from Abroad.* Orchard Hill Debating Society. (Sponsor, TDA.) 8 p.m. DEC. 6

LEEDS. H. T. Eyres. *Wood Wearing Qualities.* Leeds College of Commerce. (Sponsor, TDA.) 6.45 p.m. DEC. 5

LONDON. *Building Exhibition.* Olympia. Daily, 10 a.m. to 8 p.m. UNTIL DEC. 1

Kenneth Adamson. *Design Demonstration.* 15, Lisle Street, W.C.2. (Sponsor, AIA). 8 p.m. DEC. 1

G. A. Jellicoe. *Planning and the Landscape.* Livingstone Hall, Broadway, Westminster, S.W.1. (Sponsor, TPI.) 6 p.m. DEC. 1

B. J. Collins. *Planning Aspects of the Town and Country Act, 1949.* St. Ermin's Hotel, Caxton Street, S.W.1. (Sponsor, IRA.) 6.30 p.m. DEC. 2

Anthony Clapham. *A History of the Surveyor's Profession.* 12, Great George Street, S.W.1. (Sponsor, RICS.) 5.30 p.m. DEC. 5

Frederick Gibberd, Alec Clunes, Richard Southern. *Theatre Architecture, its Tradition and Future.* 66, Portland Place, W.1. (Sponsors, RIBA and Society for Theatre Research.) 6 p.m. DEC. 7

Richard Eve. *BRS Heating Trials and their Effect on House Design.* 66, Portland Place, W.1. (Sponsor, Architectural Science Board.) 6 p.m. DEC. 13

MANCHESTER. D. A. Hubbard. *Plywood and Synthetic Adhesives.* Gas Showrooms, Town Hall. (Sponsor, TDA.) 7 p.m. DEC. 5

J. C. Weston. *House Insulation.* College of Technology, Sackville Street. (Sponsor, MOW.) 7.15 p.m. DEC. 2

PRESTON. D. A. Hubbard. *Plywood and Synthetic Adhesives.* Old Council Chamber, Town Hall, Fishergate. (Sponsor, TDA.) 7 p.m. DEC. 7

STOCKTON. C. J. Masterman. *Prestressed Concrete Developments at MOW Field Test Unit.* YMCA Little Theatre, Dovecot Street. (Sponsor, MOW.) 7 p.m. DEC. 6

COMPETITIONS

Competition for designs for interior treatment of two saloon bars and two public bars. (Sponsor, The Architectural Press Ltd.) Prizes: (1) £500; (2) £250; (3) £100. Assessors: Hugh Casson; J. S. Eagles; R. Furneaux Jordan; E. B. Musman; and J. M. Richards (representing the editors of *The Architectural Review*). Designs must be received by mid-day, February 28, 1950.

Art School, Jersey, Channel Islands. The Association of Old Victorians invite architects of British nationality to submit designs in competition for war memorial buildings proposed to be erected in the Victoria College Grounds, Jersey, Channel Islands. Assessor: A. E. O. Geens. Premiums: £75, £50 and £25. Completed designs should be sent to A. H. Worrall, hon. treasurer, The Association of Old Victorians, 25, Cleveland Road, Jersey, C.I., not later than April 3, 1950. Questions must be received on or before December 31 by Mr. Worrall, who will also provide a copy of the conditions on the deposit of £1 1s. Following are extracts from the conditions:—The elevation should be treated in a restrained and dignified manner, having regard to the existing buildings of the Victoria College, which are mainly built of granite in the Gothic style. The entrance porch should be approximately 14 ft. by 12 ft. It is the intention of the promoters to use this entrance porch as a War Memorial to past students of the College. Adequate space should be provided for a memorial tablet. The main studio should be approximately 34 ft. by 20 ft. by 14 ft. in height. Four smaller studios are also required.

NEWS

THURSDAY, December 1, 1949

No. 2860 VOL. 110

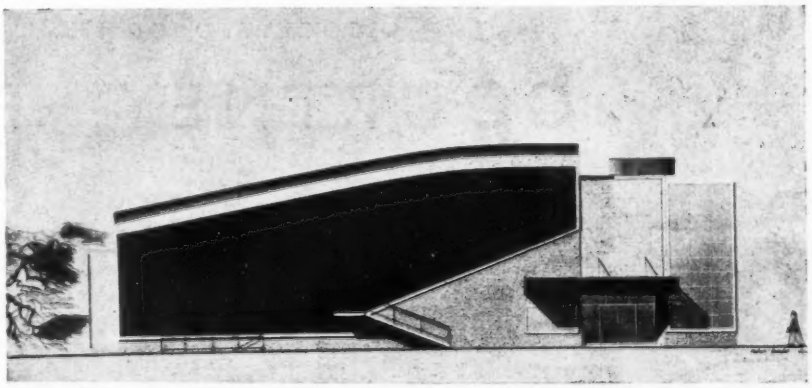
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Though no feature in the JOURNAL *is without value for someone, there are often good reasons why certain news calls for special emphasis.*

★ *means spare a second for this, it will probably be worth it.*

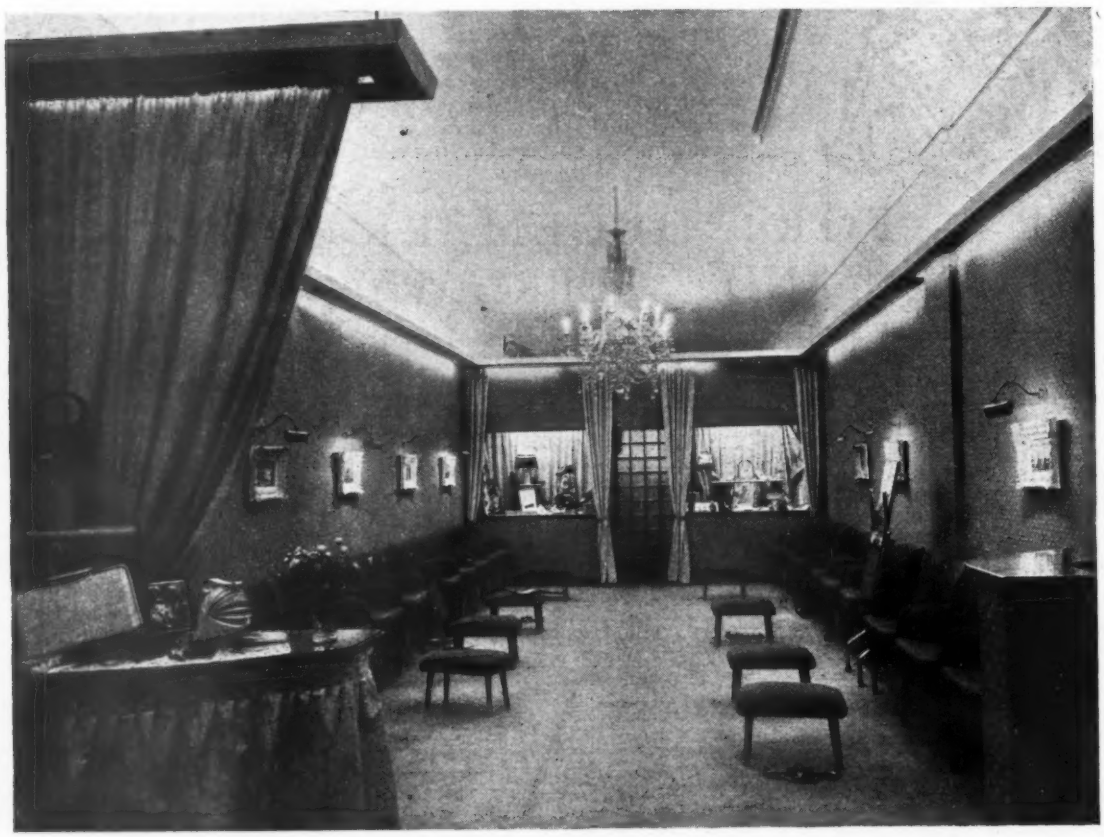
★★ *means important news, for reasons which may or may not be obvious.*

Any feature marked with more than two stars is very big building news indeed.



The Telecinema designed by Wells Coates for the 1951 Festival of Britain Exhibition. (*See also page 611*).

CREATION WITH CRAFTSMANSHIP



A view in the new showrooms of Messrs. Lederer, 45 Brompton Road, London, S.W.1. Architect: Lionel Brett, M.A., A.R.I.B.A. Interior Decoration by Courtney Pope Ltd. Electrical work by Courtney Pope (Electrical) Ltd.

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From AN ARCHITECT'S *Commonplace Book*

[*From* A Calendar of British Taste from 1600-1800, *by E. F. Carritt* (*Routledge & Kegan Paul. Ltd.* 21s.).]
Saxon style . . . they had no tabernacles (or niches and canopies), nor any statues to adorn their buildings on the outside, which are the principal grace of what is called the Gothic ; . . . they used reliefs sometimes with profusion as in the Saxon gateway of the Abbey at Bury : . . Besides the chevron work (or zig-zag moulding), there is also the Billetted-moulding . . . the Nail head . . . the Nebule (undulating line) ; to adorn their vast massive columns there was the spiral-grove and the net or Lozenge-work. Possibly the pointed arch might take its rise from those arcades we see in the early Norman (or Saxon) buildings on walls, where the wide semi-circular arches cross and intersect . . . The wall south of the choir at St. Cross of King Stephen's time . . . The rage of repairing, beautifying, white-washing, painting, and gilding, and above all, the mixture of Greek (or Roman) ornaments in Gothic edifices. This well-meant fury has been, and will be little less fatal to our ancient magnificent edifices, than the Reformation and the Civil Wars. [Gray to Bentham (on History of Ely).]

★★

SIR PATRICK ABERCROMBIE is to receive the GOLD MEDAL of the American Institute of Architects.

Sir Patrick Abercrombie was selected to receive the Gold Medal by unanimous vote of the AIA's board of directors at its November meeting. This medal, which is the highest honour the Institute can bestow, will be presented at a ceremony following the annual dinner held in connection with the 82nd AIA convention in Washington, DC, on May 10-13 next year. Last year the award was made to Frank Lloyd Wright.

PORTSMOUTH'S NEW TOWN PROPOSAL OPPOSED.

Abandonment of Portsmouth's projected new town of 22,000 people at Leigh Park, near Havant, is recommended in the outline plan for the Portsmouth district prepared by the Max Lock Planning Group, and published by the Hampshire County Council at the Castle, Winchester. The report also criticises the city plan for seeking to reduce Portsmouth's population within its present boundaries from 216,000 to 150,000, holding that the city can comfortably accommodate 196,000. It is stated in the report that more than 80 per cent. of its proposals could be carried out by 1963 with the area's existing resources.

HEMEL HEMPSTEAD TC objects that the new town's cost has not been announced.

The chief objection of the Town Council, which was lodged at an inquiry held in the Hertfordshire town last week, was that the financial aspect of the new town had not been disclosed.

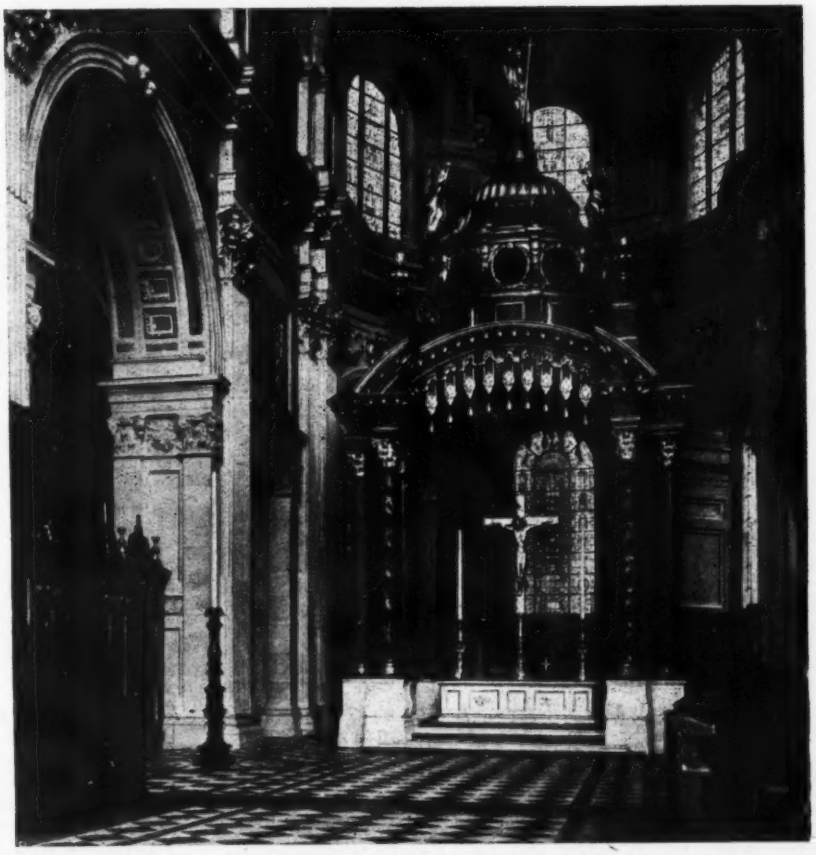
Mr. William Hart, general manager of the development corporation, said that the corporation's view was that any estimates produced now would be valueless as any form of safeguard against a "white elephant." The local councils' financial interests were not relevant to the discussion of the outline plan.

The COUNCIL for the preservation of RURAL WALES is to study the effect of a hydro-electricity scheme in Scotland.

On December 2, at the invitation of the British Electricity Authority, a party of people from Wales will be visiting the site of the Galloway hydro-electricity scheme in Scotland. The object will be to observe the effect upon that countryside of the existing scheme and to study various other relevant considerations. The party will consist of Lord Aberconway; Major Clough Williams-Ellis (a vice-president of the CPRW); Lt.-Col. J. F. Williams Wynne (chairman of the CPRW Hydro-Electricity Investigation Committee); Mrs. Rupert Williams-Ellis (chairman of the Caernarvonshire Branch, CPRW); and Mr. Humphrey Evans (general secretary, CPRW, and representative of the National Trust in Wales).

Maintenance Scholarships in Architecture are offered by the ARCUK.

These scholarships, which the Architects' Registration Council of the United Kingdom offer for award in June, 1950, will consist of a grant for the payment of one-third of the school fees and, when necessary, a maintenance allowance. The scholarships will be renewable from year to year until the student has finished his or her school training. They will be available for students of British nationality who could not otherwise afford such training to enable them to attend architectural schools approved by the council. The scholarships will be available both for students who have already begun their training and for students wishing to begin their training, but will not be granted to students who will be less than 17 *years of age on October 1 of the year in which the examination is taken.* Particulars and forms of application may be obtained from the Secretary to the Board of Architectural Education, Architects' Registration Council of the United Kingdom, 68, Portland Place, London, W.1. The closing date for the receipt of applications is January 31, 1950.



Looking eastwards into the model now on view in St. Paul's Cathedral showing the proposed baldachino over the newly designed high altar. See also the frontispiece to this issue.



Baldachino for St. Pauls

A half-inch scale model has now been made showing the proposed reconstruction of the east end of St. Paul's Cathedral, the preliminary drawings for which were published last year. The principal feature is a baroque baldachino, the upper part of which is illustrated in this photograph, replacing the reredos damaged by a bomb. The model is on show to the public in the cathedral until December 13. It also shows the design, previously unpublished, for the furnishing of the apsidal chapel east of the altar as an American memorial chapel. Further photographs of the model will be published next week. The architects are Godfrey Allen (Surveyor to the Fabric) and S. E. Dykes Bower.

A SWEDISH TOWN PLANNER has been studying new towns in Britain.

Professor Uno Ahren, Professor of Town Planning, University College of Technology, Stockholm, and the leading authority on town planning in Sweden, has spent two weeks in the United Kingdom, under the auspices of the British Council.

SIXTY NEW SCHOOL Departments were built in three months this year.

Thirty-seven of these buildings, which were constructed between June 1 and October 1, were complete at the end of this period, and twenty-three were ready for occupation, although there was still some work to be done. This was announced by Mr. George Tomlinson, the Minister of Education, on Wednesday, November 16, when he opened a new primary school at Taunton, Somerset.

★★

ARCHITECT APPOINTED for BBC DEVELOPMENT.

Mr. Graham Dawbarn has been appointed architect for the first stage of the BBC's development of their White City site, in association with Mr. M. T. Tudsbery, the corporation's civil engineer. The appointment has been made from names put forward by the RIBA, who were informed of the nature and scope of the project. The first stage will absorb some seven acres and will be devoted to television.

The decision to develop the site in this manner, instead of holding a planning competition for the whole, as was originally intended, has been taken in order to preserve the flexibility necessary to meet changing demands in the most efficient manner.

Mr. Howard M. Robertson and Professor W. G. Holford have consented to act as architectural advisers to the BBC in connection with the project.



Mr. Graham Dawbarn, who has been appointed architect for the first stage of the BBC's development of the White City site. (See news item above).

BUILDING EXHIBITION, 1951

THE Building Exhibition at Olympia, which closes today has aroused the same criticisms that have been levelled at it in previous years. The organizers must, by now, be aware that two major improvements are necessary. In the first place, visitors should be able to find their way to displays of particular manufacturers with less difficulty. And, secondly, the exhibition should be laid out in such a way that the designs of adjoining stands harmonize and give a cohesive pattern to the immense display space.

What are the organizer's views about this? So far they have made no decision to alter existing arrangements. But surely 1951 should be a time for experiment at Olympia. What the exhibition really needs is a co-ordinating architect, with the ability to visualize the display area as a whole, who would supervise the work of a panel of architects. It has been suggested that each member of such a panel could be responsible for the design of a group of exhibits representing a particular trade. This would, of course, be the ideal solution to the problem of providing a visually satisfying exhibition as well as facilities to help visitors to locate the products that interest them.

However, the organizers have already considered the possibility of grouping trades and have found it impracticable for several reasons. Many exhibitors object to the idea. They have occupied the same position at Olympia for many years and consider that their address there is as well known as their business address. And even if this difficulty could be overcome, there would still be the problem of providing exhibitors with water, gas or electricity, which are available only in certain parts of the building. Then, again, a large area of the floor space is not strong and can only bear limited weights. Finally, there would be the difficulty of estimating in advance how much space each group would need. Thus, although grouping could be planned up to a certain point, the scheme might eventually break down, and last-minute exhibitors would have to be placed in groups to which they were not related. Of course the ideal solution to any problem creates many difficulties. And in spite of the fact that these arguments against grouping by exhibitors appear conclusive, they would doubtless soon be nullified if exhibitors and organizers were to collaborate in a real attempt to put the interests of the visitor before their own.

This is not likely to happen. It seems, therefore, that the most useful way of helping the visitor to find what he wants is that put forward by one of our technical experts, who are giving their third report on the exhibition in this issue of the JOURNAL. He suggests that the catalogue should include a list showing the visitor on which stand he can find reference to a specific material, irrespective of whether it is the principal subject for display on that stand.

As for the question of the general design, it might be possible

to divide certain sections of the exhibition area between members of a panel of architects, so that even though trades would not be grouped, the appearance of the exhibition would be improved. No doubt many exhibitors would claim that the general appearance is not important to them. They would be wrong. The present arrangement of layout with its juxtaposition of good and inferior stands, tends to give an unsatisfying effect. And far too many open stands are placed close to each other, giving a confused impression of a mass of struts and flimsy frames. Such planning inevitably produces a result that is tiring and irritating to the visitor and consequently detrimental to exhibitors.

Thus, although the organizers of the exhibition must be congratulated on the general standard of their present display they might be wise to consider the possibility of planning for greater co-ordination in layout in 1951. This would, of course, necessitate unselfish co-operation from exhibitors. But they should realise that team-work for the sake of the whole exhibition would result in greater benefit for the individual exhibitor.



The Architects' Journal

9, 11, and 13, Queen Anne's Gate, Westminster, S.W.1.
Phone: Whitehall 0611

NOTES & TOPICS

COMMITTEE WORK

According to Hugh Casson, who conducted last week's conference to the architectural press on the subject of the South Bank Exhibition, the plan is the work of a committee. "Committees," he said, "are believed never to design anything. Here is something to disprove this theory." He was, of course, slightly begging the real question, which is not whether committees can design, but whether they can design well. The answer, as usual, is: it depends. The UNO building in New York is a committee job, and despite Mumford's strictures, is to my mind a reasonably direct and handsome piece of work. I think, too, that the Exhibition plan, while inevitably a little crowded and confused—(there are only 27 acres or so to play with)—has the right "feel" about it, and considering the peculiar difficulties of the site and theme, is remarkably coherent.

*

The problem set was a unique one, for this is the first time that an Exhibition has set out to tell a narrative and sequential—(sorry! I quote the handout)—story in a series of related buildings. This has meant that each "chapter" (or pavilion) must be of a certain area predetermined by its thematic importance and must also occur in the right sequence to its neighbours, so that no retracing of footsteps is necessary. Having solved this acrostic, the architect still had to solve the equally important problem of obtaining visual excitement by contrasted plan forms and silhouettes, in addition to the more boring chores of putting in enough lavatories and 'phone boxes. Well, there it is, and no doubt, when further details are released, we shall get a clearer picture of how it works and what it will look like. The Festival has got a good team of architects and designers and they can all be trusted, I think, to give us a good job.

HERTFORDSHIRE'S TWIN TOWNS

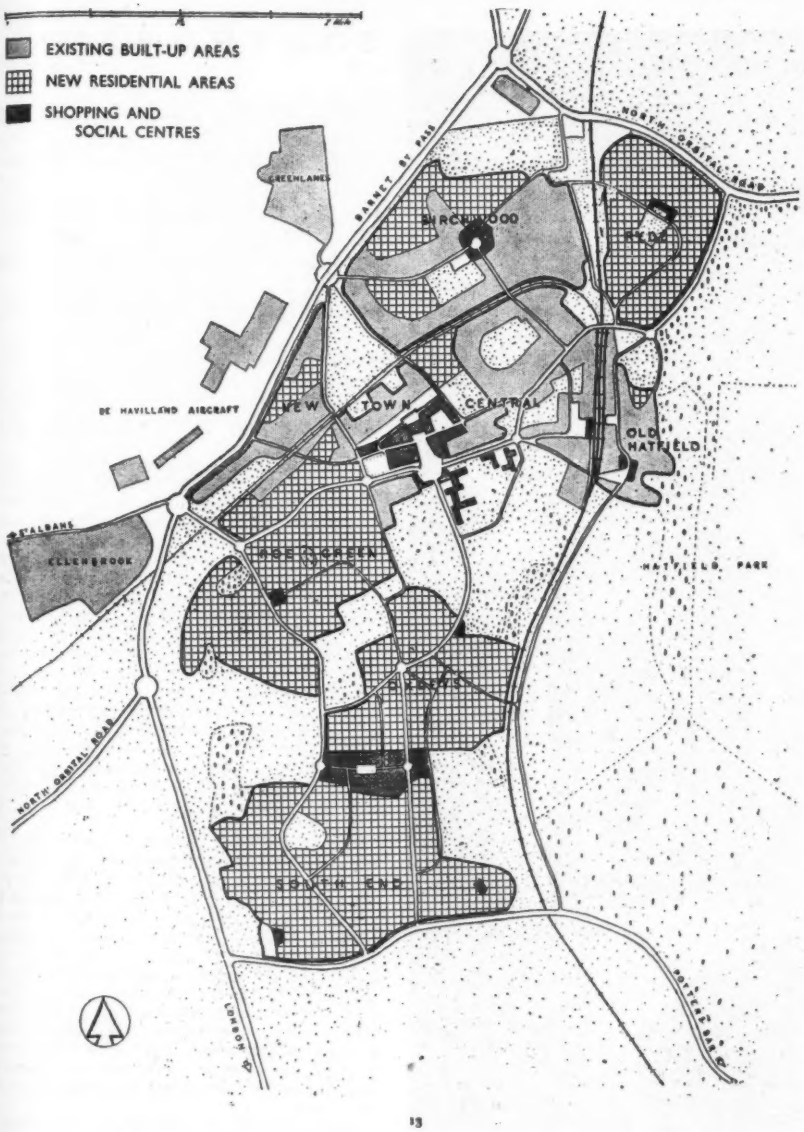
Felicitations to Lionel Brett on getting out his master plan for Hatfield in about half the time taken by some of the new towns in other counties, and without the quarrels and objections that have been so saddening a feature of the new town undertakings elsewhere. Also on the clarity of the diagrams illustrating his report, one of which I reproduce opposite, reduced to about two thirds of the original size. They are a model of their kind, which cannot be said of the rather messy plans in the Welwyn Garden City report, issued at the same time.

*

The two new towns share the same Development Corporation; otherwise they are independent. Louis de Soissons, who had been planner to the Welwyn Garden City Company for many years before his appointment in June of last year as consultant to the Welwyn new town, was in a strong position to forge straight ahead on the familiar Welwyn lines. Lionel Brett, at Hatfield, had a more difficult task of dealing with a typically unplanned area, where a compact old town had been overlaid by sporadic recent development. It is not, in the strict sense, a new town, but the controlled expansion of a town of 8,500 to accommodate 25,000, and is all the more interesting for that reason. It sets a precedent that might well be followed in other places where a growth of population and an accretion of industry threaten to upset their social balance and destroy their shapeliness. There is a limit to the amount of space available in Britain for new towns, but no limit to the number of old towns that would benefit by being, so to speak, re-created after the kind of careful analysis of present-day needs and resources that Lionel Brett has given to Hatfield.

*

I haven't the space here to discuss the recommendations of these two master-plans in detail. I will only say that everyone who knows Welwyn will approve of Louis de Soissons' decision not to build on the Sherrardswood (which the old Garden City Company wanted to do); that everyone will admire the boldness of Lionel Brett's proposal to divert the traffic that still uses the old Great North Road along the Barnet



The outline plan for the new town of Hatfield, prepared by Lionel Brett. [*See Astragal's comment on the opposite page.*]

by-pass; and that I, personally, do not regard his net residential density of 37 to the acre as too high, though there seems to be a hint in the report that it may be found so in practice.

MENTION FOR AA THIRD PROGRAMME

It is not yet a frequent occurrence, thank Heaven, when a man can be made to sit in public and be lectured to by himself. Last week, at the AA, Frederick Gibberd, Robert Jordan and Percy Marshall, accompanied by a very enlightened young audience, listened to their recorded broadcast on public architecture. The strain of listening to a half-hour broadcast without answering back put a pleasant amount of bite into the discussion which followed.

Two points are, however, worth making. Firstly, it seems a pity when architects speak so very rarely on the wireless that it has to be the occasion for a mild family squabble—due, it would appear, largely to misunderstanding on both sides. Both public architectural offices and private offices can do good work if they are efficiently and sensitively organized (take a trip to Herts CC, Mr. Gibberd; Percy, go to Frederick). How much more profitable would have been a discussion on how to achieve that organization? But still, it is better to have a good public row than to exist in genteel impotent silence.

•

Secondly, I do wish people would not confuse the faults inherent in human nature with the faults of office. The work of private architects does not *necessarily* suffer because they have to think of their pockets, any more than public architects *necessarily* produce better designs because their future is relatively secure. The dangers to the art of architecture lie more in the weakness of human nature than in the public or private state of the architect. If that does not sound true—search your conscience.

FAIL FOR RIBA

Doctors should look healthy, lawyers crafty, bankers sound, me boy, and safe. Architects? Well, at least interestingly clothed and housed. This is unfortunate, in a way, because it costs more than the requirements of the others. Nevertheless, the RIBA should bear it in mind. For the second time in three months a RIBA exhibit shows more the qualities expected in a banker than an architect. The RIBA stand and club room at Olympia is embarrassingly lacking in taste. Their stand at Tunbridge Wells last September was not much better. Please, RIBA, with all those clever builders and engineers looking on, show some design ability.

GOOD ADVERTISING

One of the specialists, reporting in the JOURNAL on the Building Exhibition, asked for uniformity in the presentation of literature produced by exhibitors. Architects are often critical about the kind of advertisements they find in technical journals. While some manage to be not only informative but attractive as well, far too many are ugly and useless.

•

It is pleasing, therefore, to find in this harsh competitive world that two leading firms of advertising agents (E. Walter George Ltd. and Allardyce Palmer Ltd.) share a joint exhibit at Olympia in an endeavour to persuade the building industry to advertise in an interesting, imaginative and helpful way. All success to their effort. I will be waiting eagerly for the results of this campaign to catch my eye among the rubbishy brochures which come in my morning post.

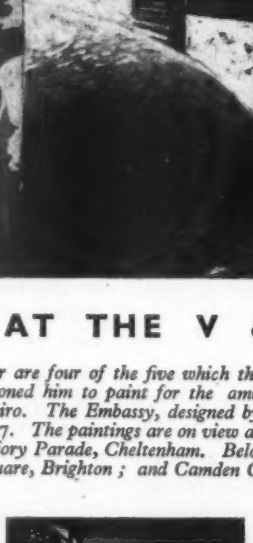
ASTRAGAL

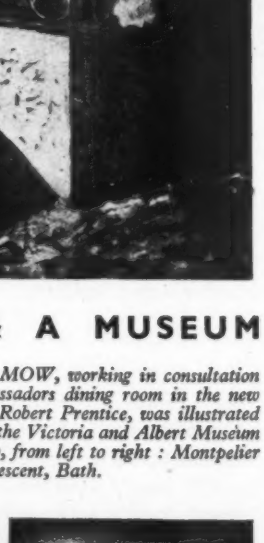


JOHN PIPER AT THE V & A MUSEUM

These oil paintings by John Piper are four of the five which the MOW, working in consultation with the Foreign Office, commissioned him to paint for the ambassadors dining room in the new Embassy Building at Rio de Janeiro. The Embassy, designed by Robert Prentice, was illustrated in the JOURNAL *for October 9, 1947. The paintings are on view at the Victoria and Albert Museum until December 4. Above, the Priory Parade, Cheltenham. Below, from left to right : Montpelier Walk, Cheltenham ; Regency Square, Brighton ; and Camden Crescent, Bath.*







SOUTH BANK :

Following the publication in last week's JOURNAL *of some of the proposals for the South Bank Exhibition, we print below some further details on the design and construction of the exhibition buildings.*

Upstream Section :

Waterloo Entrance. (Gordon Tait, of Sir John Burnet, Tait and Partners.) A building comprising ground, mezzanine and first floors planned to accommodate the escalator head from Waterloo Underground Station. The ground floor is mainly devoted to turnstile and entrance facilities, including police, first-aid and management offices, while the first floor links with Waterloo Station across the York Road footbridge at high level. The building is a light frame construction, part reinforced concrete, part steel, the roof being suspended from laminated wood arches which are themselves an exhibit of the technique of laminated timber construction. The walls of the buildings will be covered with sprayed cement. Overall height is approximately 60 ft. and the building measures approximately 160 ft. by 120 ft.

Service and Administration Block. (Architects' Co-operative Partnership.) A corridor type of building about 350 ft. long, 30 ft. wide and about 12 ft. high. The structural system is partly of breeze blocks with a small amount of steel, and the cladding includes plywood panels and corrugated asbestos. It houses an Information Centre, Post Office, Telegraph Office, Left Luggage, etc., and at one end a small restaurant. Above this runs a decorative screen approximately 60 ft. high, below which, built over decorative pools, are three information kiosks approached by footbridges from the entrance courtyard.

Natural Resources. (Architects' Co-operative Partnership.) This building is partly below ground, covers an area of 80 ft. square and is surmounted by a tetrahedron of concrete slab construction which rises above the ground to a height of some 70 ft.

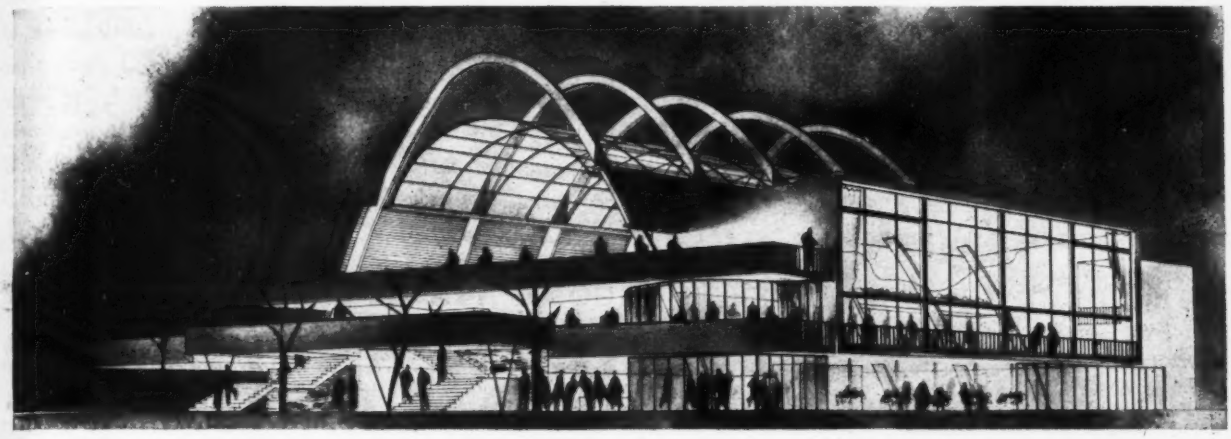
Administrative Offices. (Architects' Co-operative Partnership.) This block partly encircles the Chicheley Street entrance courtyard. Included also in this section is the ceremonial entrance which is of temporary prefabricated construction.

Country. (Brian O'Rorke.) A Dutch barn type of building, approximately 50 ft. high measuring on plan approximately 100 ft. by 250 ft., and placed in a garden setting. It has a first floor gallery and is covered externally with corrugated asbestos, canvas and weather boarding. There are also decorative panels of masonry.

Industry. (G. Grenfell Baines, in collaboration with H. J. Reisenberg.) A tubular steel framed building about 50 ft. high and approximately 300 ft. by 100 ft. on plan. It is covered externally with glass, corrugated asbestos, and brick panels. There is an internal gallery from which the ground floor exhibition hall can be viewed and which itself accommodates exhibits.

Sea and Ships. (Basil Spence.) The structural system consists of a series of portal frames of light steel construction forming an enclosure approximately 50 ft. wide and 40 ft. high and 300 ft. long. In addition there is a section some 50 ft. away from the main block on the river front and linked

FURTHER DETAILS OF THE 1951 EXHIBITION



The Waterloo Entrance by Gordon Tait.

with it by a bridge. This bridge is about 12 ft. above ground level and overlooks the river pier. There is an internal gallery to the main block at approximately the same height. The main floor is at different levels to accommodate the different exhibits in their most effective setting. Cladding will be part aluminium and asbestos sheeting and part canvas.

Bailey Bridge and Restaurant. (Misha Black.) The Bailey Bridge is decorated with revolving wind operated pylons and other features designed and placed so as not to obscure the bridge itself, which is being erected by the Royal Engineers as an outstanding example of British engineering achievement. A large two-storey restaurant forms the South Bank Bridge head.

Transport. (Messrs. Arcon.) A steel frame building approximately 250 ft. long, and between 40 ft. and 60 ft. high, with an open ground floor treatment. It is clad in asbestos sheeting and glazing, and includes three galleries at different heights.

The People of Britain. (H. T. Cadbury-Brown.) The entrance pierces a cone-shaped canopy into some existing railway bridge vaults which house the introductory theme. The building itself is of light steel frame left exposed, with brick panel walls standing free of the steel work. The exhibits are seen from platforms and ramps at different levels.

The Land of Britain. (H. T. Cadbury-Brown.) This is approached through a similar cone-shaped canopy direct into the building which rises out of earth and rock formations surrounding it. (These two structures compose the two main entrances to the narratives of The Land of Britain and The People of Britain.)

Dome of Discovery. (Ralph Tubbs.) This is 365 ft. in diameter and is the largest dome in the world. It is supported on steel struts and will be sheathed externally with aluminium. The main dimensions are 45 ft. to eaves and 93 ft. to the apex of the dome. There will be internal galleries at varying heights.

Downstream Section :

Character and Tradition. (R. Y. Goodden and R. D. Russell.) A simple rectangular structure with a gallery along one of the long sides and stairs at each end. Three-quarters of the long wall looking on to the exhibition courtyard is glazed from the ground to eaves level. The roof is curved in section and the walls are finished with cement rendering sprayed on to expanded metal lathing.

Attached to this building is a small open-air restaurant with a canvas roof supported by decorative poles.

Introductory Pavilion. (Wells Coates.) A rectangular building on two floors, about a third of the ground floor being open to serve as an external passage-way from under Hungerford Bridge. The building will be of prefabricated construction and artificially lit.

Telecinema. (Wells Coates.) This building makes use of the existing basements of demolished properties, and the ground-floor auditorium level is thus about 9 ft. below ground level. Above this reinforced concrete basement "tank" is a light steel superstructure spanned by standard-size steel roof trusses. The balcony and projection equipment sections are constructed as a box girder frame. As this building is adjacent to the railway bridge, protection against noise is an important design factor. The walls of the main hall are covered with a 9 in. quilt hung from the steel framework composed of soundproof material and waterproof mixes, etc., held in position by light alloy frames; in addition, the inside of the auditorium will have acoustic treatment giving an overall wall thickness of 1 ft. 6 in. The staircase-foyer block and screen block components will be of prefabricated construction.

The planning of the telecinema has been arranged to overcome the difficult technical problems of combining the short throw of the television projectors with the normal cinema requirements. (See page 603.)

The Creche. (Denis Clarke Hall.) This is designed to take 250 children (age five to seven years). It includes reception, playrooms, a well-equipped open-air play space for infants and juniors, together with a rest room, milk bar, medical section, miniature cinema and administration block. The structure is composed of light tubular metal framing, clad in asbestos, wall board, canvas, etc.

The Family Pavilion. (Denis Clarke Hall.) A rectangular-shaped building having a light steel frame structure, the walls and roof being formed of stretched canvas panels.

Homes and Gardens. (Bronek Katz and R. Vaughan). A large covered area about 20 ft. high, constructed of a light tubular steel scaffold frame covered with asbestos sheeting. Canvas, glazing, and decorative stone wall panels are extensively used.

Administration and Canteen. (Edward D. Mills.) This will be a two- and three-storey building constructed above the old Waterloo Bridge Road vaults. In some of the vaults themselves will be workshops, stores and management services. The building above the vaults is planned with a balcony approach made gay with flowers and awnings. There is to be a decorative screen to link this building with the telecinema along the perimeter of the exhibition site.

Waterloo Bridge Entrance. (Maxwell Fry and Jane Drew.) This consists of turnstiles, entrances and exits from Waterloo Bridge Road, with stairs and ramps down to ground level some 30 ft. below Waterloo Bridge Road, to be constructed mainly in reinforced concrete with light metal and plastic superstructure. The tower adjacent to the entrance consists of open tubular framework with decorative features and will house a glass-sided lift serving a viewing platform 80 ft. above ground level. Under this building will be a series of spaces devoted to display on "Schools." Some of the vaults under Waterloo Bridge Road will also be used for this and for the display of "Health and Welfare."

Dockside Café. (Maxwell Fry and Jane Drew.) This is placed overlooking the pools, which will contain river craft, model boats, etc. It will be in light prefabricated construction, openly planned, and predominantly canvas clad.

Riverside Restaurant. (Maxwell Fry and Jane Drew.) This will follow the curved wall of the river embankment under Waterloo Bridge. Above the embankment wall it will have an all-glass front. It will be a prefabricated structure with canvas and plaster cladding, designed to permit of quick erection in the limited time available between the completion of the embankment wall and the opening date of the exhibition.

Sports Pavilion. (Maxwell Fry and Jane Drew.) This is an openly planned rectangular structure with a gallery. It will be of light prefabricated construction, mainly canvas clad.

Shot Tower. (Hugh Casson and James Gardner.) The Shot Tower itself is to be surmounted by a lighthouse and radio telescope, and a decorative balcony will be erected around its base. Between the Shot Tower and the Sports Pavilion will be a grass arena for displays of physical culture and various sports. Two decorative pools, one constructed within the existing barge dock on the site and designed for the display of model yachts and river craft, complete the boundaries of this zone.

Seaside. (Eric Brown and Peter Chamberlin.) An open-air display situated along the embankment terrace between the LCC concert hall and the river. The main display is arranged below a canvas velarium parallel to the long side of the concert hall terrace and slung from lattice steel masts carrying "look-out" points overhanging the river. A bridge containing a bar will overlook the approaches to one of the two main river landing stages.

BUILDING EXHIBITION: 1949

The Building Exhibition at Olympia closes today, and in this concluding article, the third in a series, our team of nine specialists who have been acting under a general editor, express their afterthoughts on the exhibition. They refer to any items which they omitted last week, they develop some ideas and descriptions first raised in the preceding articles, they give their general impressions of the show as a whole, some of them highly critical ones, and they record their hopes for building exhibitions of the future. Included in the team are three engineers, three architects, the head of a building department at a famous university, a technical journalist, and an industrial designer. Further information is also given by Brian Grant on page 628.

THE SPECIALIST EXPRESSES SECOND THOUGHTS AND SUMS UP

Concrete: The visitor's first reaction to the Exhibition was one of bewilderment. He was confronted with a mass of exhibits spread over a huge area in an unco-ordinated manner and it was very difficult to locate those subjects in which he was particularly interested. Take for example light-weight concrete. The foamed slag concrete stand was in the Grand Hall, the stand of the Pyrene Co. on one side of the National Hall Gallery, that of MetaMica Ltd. on the other, and the stand of the Structural and Mechanical Development Engineers, who produce and market light-weight concrete slabs, in the Grand Hall. One did not expect to see anything relating to light-weight concrete at the latter's stand so one felt that probably quite a few stands giving useful information had been missed. Whatever subject one chose (prestressed concrete, shell concrete, vibrators), the experience was the same.

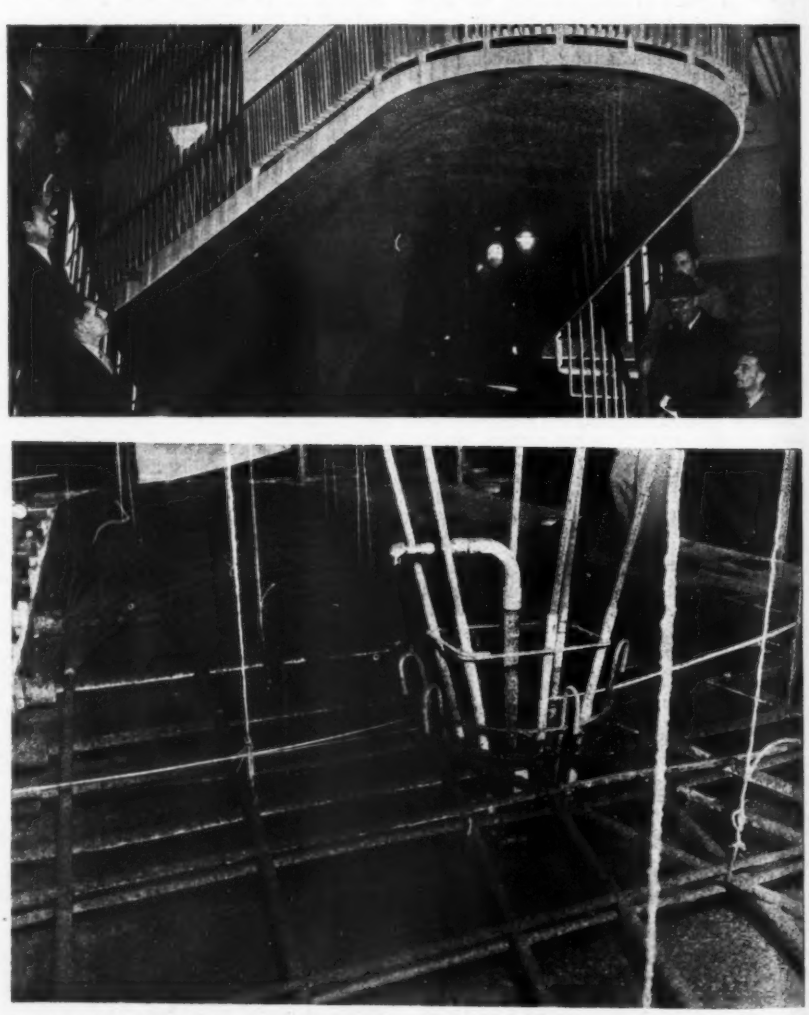
Of course, it may be impossible rigidly to group stands exhibiting similar products since many firms show a wide range of articles and materials, but surely the present arrangement could have been greatly improved. Perhaps the best way out of the chaos would be to issue a classified catalogue in which all subjects are listed in alphabetical order and the numbers of stands where relevant information may be obtained are given under each heading, so that the visitor can see at once which stands he should inspect. As it is now, the visitor leaves the Exhibition, after having spent many hours, or even days, there, with the unsatisfactory feeling that, in spite of all his efforts, he may have missed something important.

Reconsidering the individual exhibits, one must refer again to the stand of the Lafarge Aluminous Cement Co., which was described in detail last week. If a competition were held between the exhibitors, this stand would, in this writer's opinion, deserve the first prize—not only because of its very pleasing appearance but because of the ingenuity it showed in using the stand itself to display the material. There are several other well-designed stands but none which is so intimately related to the material it advertises. It is rightly claimed that, but for the use of aluminous cement in combination with post-tensioning, this stand could not have been erected.

It would be unfair to expect this principle to be generally adopted, since most of the products in the building trade allow alternatives, but one must object to the opposite extreme, of which there were several examples at Olympia, where stands are built merely for the sake of producing a decorative effect, using the advertised materials in ways that would never be, and should never be, used in practice.

The Lafarge stand, incidentally, contains an interesting feature which many visitors may not have noticed. The aim of the designers was to produce, at the manufacturers' request, a surface looking like polished granite. They have succeeded pretty well but by accident the reinforcement shows through on the soffit. This has upset the engineers but has greatly intrigued the architects, because the reinforcement makes an "organic" pattern and expresses function at the same time. When reinforcement stains the surface of concrete the engineer gets worried, for it probably means that the steel will corrode, but now architects who like to express structure may try to obtain this staining effect deliberately. May there not be some way whereby organic pattern can be obtained without danger to the reinforcement?

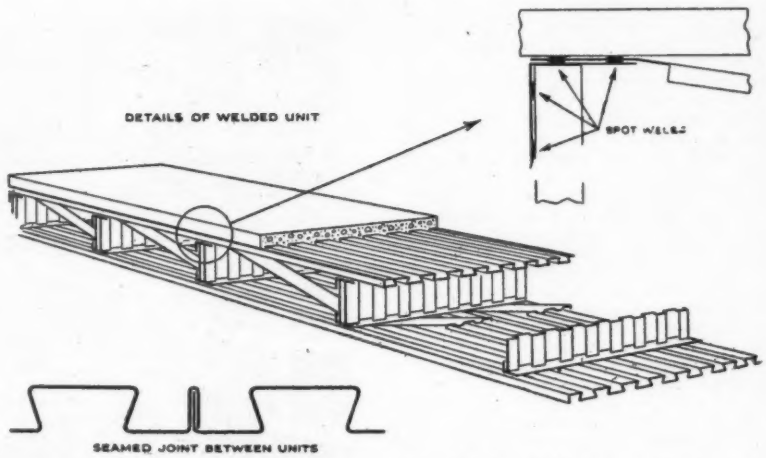
Generally speaking, the exhibits can be divided into two groups: (1) Materials, products, equipment which are more or less traditional, well known and generally accepted, exhibited only to remind visitors of the sources of supply. (2) New developments. Needless to say, for most visitors the second group is of far greater interest. Here one likes to see full explanations and



Details of the Lafarge Aluminous Cement stand. Top, the soffit of the finished slab showing the staining caused by the reinforcement. Below, the reinforcement during construction; the pipe, the head of which projects through the slab, is for water-cooling during the setting of the cement which reaches a high temperature.

also, if possible, practical demonstrations. In this connection should be mentioned the Ministry of Works exhibition on prestressed concrete, where the characteristics of this new material are well explained and its applications shown by good photographs and models, some of them full-size. The Ministry demonstrates by example that if a prestressed beam has been repeatedly loaded well beyond its design load so that severe cracks occur, these cracks completely disappear and the beam regains its original shape when the load is removed. Everybody can take in this essential feature of prestressed concrete much better in this way than by listening to hours of lecturing. Not every development is as striking as prestressed concrete or can be as easily demonstrated, but this demonstration provides an example of the ideal method of bringing home technical progress.

On the whole, the Exhibition has deserved several visits and one looks forward to an even more interesting and improved display in 1951.



Details of a hollow steel floor of Lewis dovetail sheeting marketed by Steel Ceilings Ltd.

Steel: Our first report of what we saw at the exhibition had to be rushed off to press. Quite a few interesting exhibits were discovered afterwards and at least some of them should be mentioned now.

Steel Ceilings Ltd. show Lewis dovetail sheet and structural units built from it. Their stand is actually constructed from their own material. This well-known corrugated sheet provides an excellent key for concrete, and services both as a centring and a reinforcement. It provides a typical example of construction, producing maximum strength with a minimum weight of steel.

Examples of sherardized metal products are shown by the Zinc Alloy Rust-Proofing Co. Sherardizing is a very efficient rust-proofing methods, particularly where close tolerances have to be maintained.

Durasteel Roofs Ltd. show fireproof doors of various types as approved by the fire offices committee since 1947. The "Fireman" type door is shown in a brick wall opening as tested and approved in 1948. It is designed to withstand temperatures of about 1,000 degrees Centigrade.

To summarize in a few sentences what this exhibition has shown in the field of steel and steel products:—The shortage of steel since the end of the war has had some good results. Steel has had to defend its position in competition with other materials and has done so with remarkable success. It has won new ground in tubular construction, cold pressed sections of light gauge steel, high tensile steels, welding, in the prefabrication of standard steel parts and in the mechanization of building operations.

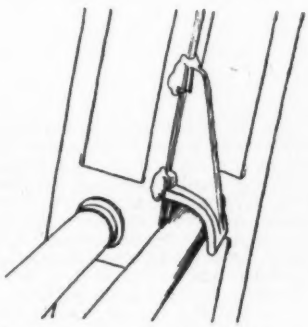
It is pleasant to see that now, in 1949, the riveted connection has become the exception and the welded joint the rule. This is as it should be in these times of steel shortage. Many applications of welding of tubes can be seen and it appears that tubular welded steel structures are at last, and deservedly, becoming popular. Tubular steel scaffoldings are now being constructed from welded tubular standard units; this does away with a considerable number of loose clamps and clamping operations.

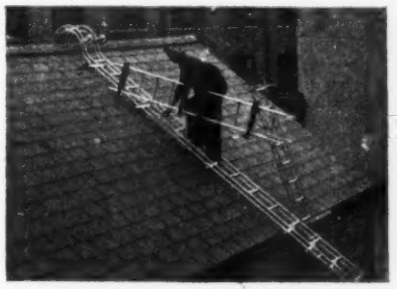
Almost every stand at the Exhibition makes use of steel in one form or another. Strangely enough, in spite of the growing importance of welding, the firms who make welding equipment and electrodes seem to be absent from this exhibition. Surely they should have taken this opportunity of demonstrating to the architect the exciting possibilities of welding.

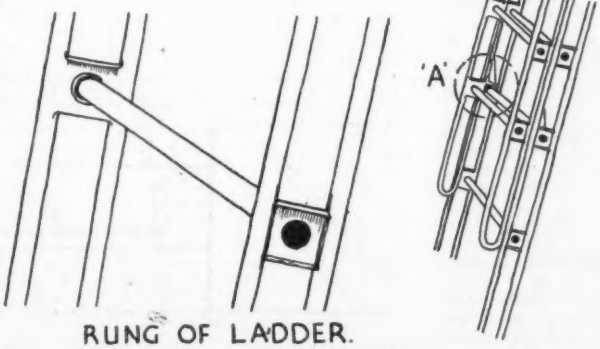
Some of the fears and hopes expressed in the first article a fortnight ago have come true. As anticipated, both the Grand Hall and the National Hall presents a confused mass of closely packed stands. The visitor has to waste far too much time in finding his bearings, and at the end of a few hours' wandering he has no idea of how much of the Exhibition he has missed which would be of particular interest to him. Would not large signposts have been helpful, including a north-south line for the benefit of those of us who have not been through a boy scout's training?

In lay-out the galleries are better than the halls and the row of chairs at one end of one of them is a boon to the weary and to those who want to survey the ground floor from above in order to discover where the stands are that they wish to see. Would it not be possible in future to develop this idea by planning a gay café along part of the gallery balustrade?

The Grand Hall is an impressive structure and an outstanding example of early steelwork. With all the shortages of material and labour we cannot hope to dispense with such buildings for a long time to come, but, however impressive the products of individual exhibitors may be, they require and deserve a more up-to-date setting. There will be a tremendous shortage of exhibition space in 1951. Where then is the *entrepreneur* who will build a new hall to house shows like the Building Exhibition really effectively and to express the technical ability and imagination of our most advanced architects and structural designers? Time may be short but not too short to build such a structure by 1951.







Details and photograph of Steelex steel ladders.

Timber : In retrospect, the Exhibition, so far as timber is concerned, is a disappointment. An exhibition of this kind should, after all, give us a peep into the future. If this is what the timber exhibitors set out to do, then it is hard to avoid the conclusion that either they failed in their objective or that the future is very drab indeed.

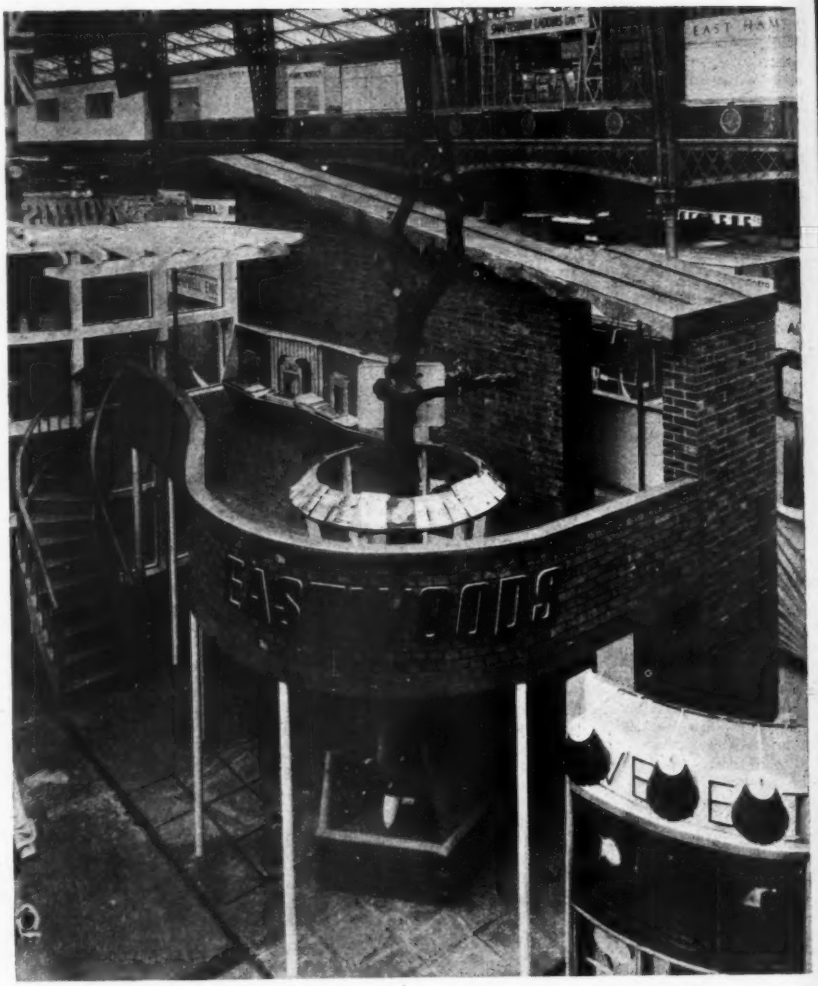
It is perhaps inevitable that an industry which has been kept on short commons, so far as its material is concerned, for a decade, should show symptoms of its discouragement in a lack of enterprise and new ideas. This indeed may be but a commentary on British industry as a whole after a protracted bout of austerity. The symptoms of apathy seem to be all too prevalent and, with one or two exceptions, the Exhibition displays a rather dull uniformity.

The difficulties with which the timber trades are faced are obvious enough. As a whole, the industries concerned are organized to deal with at least twice as much material as they are receiving, and, with no immediate prospect of improvement, it is not surprising that manufacturers should think twice before embarking on plans for capital investment invariably required for the production of new components. Prevailing conditions in the buying, selling and using of timber are far from healthy, and this is shown well enough at Olympia. In spite of all these acknowledged difficulties, however, surely industries which have shown such initiative and enterprise in the past, are capable of transcending their economic limitations for the purposes of an exhibition? Surely we are entitled to a glimpse of the future, even though the future may be a long way off.

In certain aspects of timber engineering a promise of something better has been given by the research and development organizations which are represented, but what about industry itself? Are the manufacturers taking note of the ideas that our scientists are placing before them? Are they really attempting to meet the needs of our times by greater specialization and the employment of new techniques?

The Minister of Health at the opening ceremony had a good word to say about the traditional materials and the traditional methods of construction, but, if the well established media and methods are really to hold their place in our economy, does it not follow that they can only do so by employing the most up-to-date and economical techniques within their compass?

Too little has been shown of new methods of assembly, of finishing processes, of fire resistance, and too little of the æsthetic aspects of design. It is true that some greater prominence was given to the hardwoods of the sterling areas, but no new application of these woods has been demonstrated. Surely the last word has not yet been said about floors, joinery and decorative treatments? Some of the decorative veneers demonstrated are beautiful, but they always were, and after walking many weary miles around Olympia, one is left with the impression that too much reliance is being placed on the known appeal of wood in all its forms and too little on the need for imaginative design.

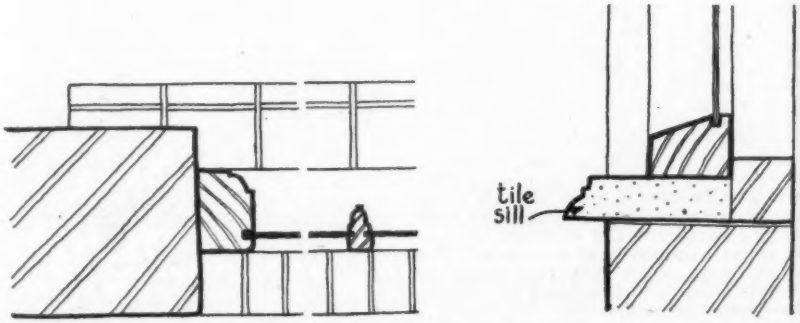


The Eastwoods Group Ltd. stand, designed by Messrs. Stillman and Eastwick-Field.

Bricks : Perhaps the development in exhibition stand design which created the greatest interest at Olympia is the double-decker type, which, in addition to increasing the floor area per stand, enables the public to have a bird's-eye view of adjacent stands.

Bricks present a very good show. Indeed, one of the most impressive stands, a delight to the eye, is the one entirely constructed of clay products. Contrasted with this structure is the type of stand, of which there are several, designed to show in a very limited space an inordinately large number of panels of facings of varying textures and colours; each of these panels is far too small to give an adequate idea of the face appearance of the brickwork in mass, and for this reason the stand fails to do justice to the goods displayed and gives but inadequate information to the architect and builder likely to be interested. In short, it is not good publicity. Nor can it be said that the best use has been made of the limited space available for the display of bricks, if the stand is substantially constructed—as one is—of timber.

A fact of interest gathered at the exhibition is that the demand for hand-made bricks is growing. Their manufacture has been revised recently, especially in the south, and, despite their relatively high cost, varying from 200s. to 230s. per thousand *ex* works, an order for them can only be met after two or three months. It seems that a scarcity of skilled labour is one reason for delayed delivery.



Plan and section of a window surround on the brick stand of G. Tucker and Son.

Critical appreciation is stimulated by the wide range of roofing tiles exhibited. Certain new features have been developed in the interlocking type, but it is hoped that even the present need to save timber, which favours the adoption of low pitched roofs, will not encourage the manufacturers of certain interlocking tiles to re-introduce those with diapers and similar finicking patterns, one or two samples of which were in evidence.

Contractors especially will be attracted by much of the mechanical excavating equipment, which shows many improvements in adaptability, manœuvrability and performance. One firm has increased the adaptability of this class of equipment by providing an attachment to a mechanical shovel for lifting and depositing bricks at scaffold height at a rate of from 1,500 to 3,000 bricks per hour. Another patent device which should attract notice is the hoist used for delivering bricks to a maximum height of 80 ft., and which now satisfies the requirements of the factory regulations by providing an enclosure with safety gates. These gates automatically close before the platform begins to ascend and open after the platform reaches ground level; it is claimed that by its use three men can deliver from 3,000 to 4,500 bricks per hour from stack to bricklayers.



Detail of Crittall's sliding-folding window of aluminium alloy.

Glass : Individual exhibits in the glass section are more interesting than the stands themselves. The inevitable battle between the designer, on the one hand, fighting for simplicity, tidiness, and a reasonable unity, and the exhibitor on the other, determined to crowd in everything possible, seems, in most cases, to have been won by the exhibitor. That of James Clark and Eaton (designed by Mr. Wells Coates) is a good compromise, and manages to retain a sense of unity, in spite of showing a considerable variety of products and special features.

Some excellent craftsmanship is to be seen in the London Sandblast Decorative Glassworks Ltd.'s stand, although the setting is hardly of the same standard.

T. W. Ide show two particularly interesting features which may claim to be "new" since the last Building Exhibition. The first is a one-piece rectangular roof dome, post-formed from Pilkington's Georgian wired cast glass. Messrs. Ide have specialized in the manufacture of these domes for a number of years in rough-cast and other glasses, but until recently the bending of wired glass has been technically an unreliable operation. Unfortunately the size of wired glass domes must remain limited, in one direction, by the maximum width of the manufactured sheet which is 42-in.

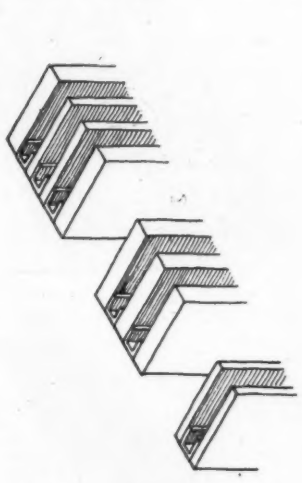
The other feature which should be of interest to architects using Vitrolite for wall linings, is a special internal or external radiused corner unit, moulded or bent from standard rectangular ashlar panels. Where 18-in. × 12-in. ashlar panels are used horizontally, for instance, the corner units provide a 2-in. radius in the centre of the 18-in. length, leaving approximately 7½-in. of straight on each of the adjoining wall faces.

J. A. King and Co. have some new exhibits to show, even if the structure of the stand has been seen more than once before.

Attractive pattern effects are produced by the use of Chance Brothers' Major Reeded Glass set horizontally on one face, and vertically on the other, the clear space between the two glasses being about 2-in. As in the Pilkington Insulight Double Glazing Unit, special requirements can be met by employing a combination of two different glasses. A panel could thus be built up by using prismatic glass of an appropriate angle on the outside, and a general diffusing glass on the inside, for ground floor glazing where tall buildings opposite prevent light from penetrating far into the room. The almost vertical rays would be diverted by the prismatic glass, pass through the panel more or less horizontally, and be re-diffused on the inner face.

A feature on the stand of Messrs. Williams and Williams is the use of glass to display a large range of metal window sections. These have been deeply sandblasted to scale on a large panel of polished plate glass, and the whole forms a pleasantly decorative screen to the interior of the stand besides showing the sections available.

Some new ideas on stained glass are demonstrated in a colourful and decorative abstract panel on this stand. Here, interesting effects are produced by contrasting bright coloured areas with dark areas which have fine line patterns etched in them.



Isometric sketches of Pilkington's Insulight glazing units. The double-glazing unit was described last week; the treble and quadruplicate units are used where a specially high degree of insulation is required as in refrigerator show cases or thermally controlled laboratories.



Sectional model of one of the new fuel-saving grates on the stand of the Coal Utilization Joint Council.



The Gas Council's stand, with its full-size replica of the gas-fire flue construction for a multi-storey building incorporating precast flue blocks.

Services : From the "Services" point of view, the Exhibition is disappointing. This is not to say that there are not some excellent exhibits: there are, and some, even, are new. Why, then, the disappointment? Partly because, in each category of equipment, the exhibitors are too limited in number to give a proper appreciation of all that is available. Thus, we find one really good stand of lighting fittings, but where are the other manufacturers of equal standing? In their absence, no comparison is possible, and surely, an object of the Exhibition is to bring like products into juxtaposition, to aid such comparison.

Take also the case of boilers; only one of a now considerable group of small gravity-fed boilers is shown. How much better if specimens of the other makes could have been seen as well. Certainly, we have seen most of them before, but what harm in refreshing our memory, both as to appearance and performance?

And so through the whole range:—sanitary fittings, drainpipes, radiators, cookers, stoves—all would benefit, were it possible to show a greater range of makes.

Now is such a thing possible? If each of the prominent, and some less prominent, manufacturers in each class were to exhibit, either the Exhibition would have to expand many times, or the stands would have to become very, very, small. Surely the answer is that exhibits should be grouped; either directly by the manufacturers concerned, or, preferably, by the respective trade associations. Some of the most successful exhibits are those of the Associations concerned with various fuels; here, one sees a representative collection of suitable appliances made by various manufacturers, and gains useful advice both as to fitting and operation.

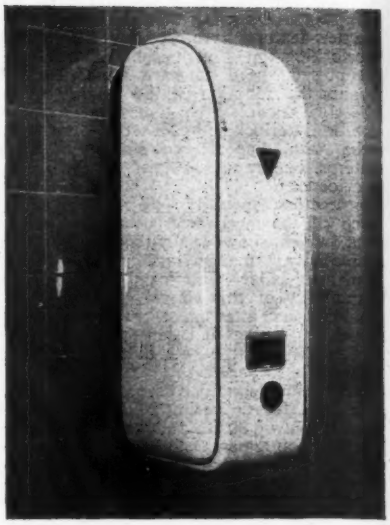
Another reason for disappointment: one goes to the Exhibition to see what is new. Of new things here, there are very few. A new boiler, which seems to come into the class I said I hoped to see (ARCHITECTS' JOURNAL, November 17)—an old type of boiler rejuvenated by better thermostatic regulation, which may come in the same category; an improved back boiler; a new fitting for soil and vent pipes, giving considerably improved neatness; some of the excellent light fittings mentioned above; some curious taps, without which no exhibition concerning building would be complete; two gas appliances using the balanced flue principle; these are the outstanding new apparatus shown. In all, few enough to justify a hard morning's walking. And a great deal of interesting new equipment has been produced during the past year; the more the pity that it is not shown at Olympia.

To end with a moan about catalogues. There is no move at all towards the hoped-for standardized sheet: rather, more and more varieties of size and thickness. So how about it for 1951?

Insulation : Second thoughts on the Building Exhibition confirm very closely one's ideas as expressed before the show was opened. Outstanding are three impressions. First, that the show is too large to see in one day—that is if, by seeing, one means more than obtaining a general impression. Secondly, that there are very few stands on which technical information can be obtained without great effort. It really is incredible that manufacturers should go to very considerable expense to put on a show and then neither label their wares, nor provide useful literature, nor even, in many cases, provide an attendant capable of answering simple technical questions. Thirdly, there is difficulty in obtaining a comprehensive picture of any one aspect of building because of the haphazard arrangement of the stands. This last point was summed up very forcibly by an architect, met over a cup of tea at about 4.30 in that haven of rest, the RIBA Clubroom. He complained bitterly that he had come down from Scotland to spend one day at the exhibition to obtain information, chiefly on one aspect of building, but that owing to the scattered nature of the show he had wasted a good deal of time and had almost certainly not seen everything he should have seen.

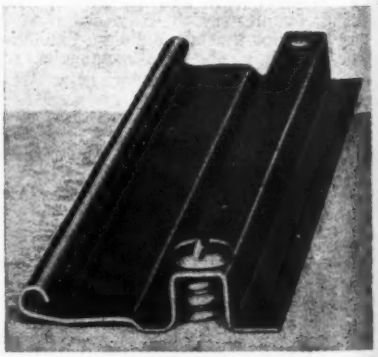
On insulation specifically, one's impression is that heat insulation is now taking a place of importance but, again, that there is too much general blurb and too little specific information. The DSIR stand shows simple house construction to meet desirable standards economically. Most of the fairly well known insulating materials are on show, but one has to look hard for them. Of the newer things, several stands should be noted as exhibiting expanded vermiculite products. The showing of the English version of a sealed double glass unit is also noteworthy. None of these displays put over their story with any force. Perhaps less new, but still not well known or in general use, are the several displays of weatherstripping for doors and windows which can be most useful heat savers as well as eliminators of unpleasant draughts. Of sound insulation and acoustics, there is little to be said. Either the subject is not shown or is shown so badly as to pass almost unnoticed, though one can find something of both hidden behind the scenes on the Fibreglass stand.

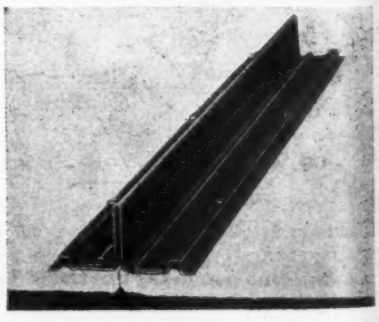
Returning to more general matters, one feels that the number of really bad stands continues to decrease but that the number of stands which are good, when judged as a means of display, is still overshadowed by the number which are too "architecturally clever." Finally, one hopes the Council of Industrial Design will have had all its troops on parade making notes, not of the good designs but of the real shockers. They should be able to fill several books with notes about fire surrounds, which seem always to be at their most horrid in exhibitions. On the other hand bad light fittings which are so common in showrooms seem little in evidence at Olympia.



An Ascot balanced flue water heater, the principle of which was described last week. A flush fitting model is shown on page 628.

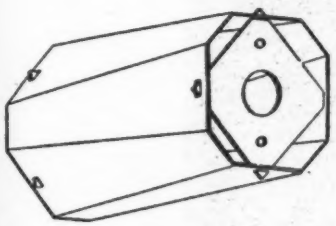
To conclude, a show which involves the expenditure of such a vast amount of money and building labour could be of so much greater practical use if tradition could be forgotten and the whole thing approached from a more logical point of view. Unfortunately, such an approach probably implies financial complications. Nevertheless, the 1951 Exhibition should provide a grand opportunity for a radical change.





Details of the Tentest concealed metal fixing for insulating-board ceilings, described last week.





Left, a foundation bolt box of expanded aluminium produced by the Expanded Metal Co. Below, another type of bolt box is the Besserform double dovetailed bolt hole formerly made by the British Steel Reinforcement Co.

some enterprising paint firm could have made out of either the Ostwald or Munsell system.

It seems to me that far too few stand designers realise that what may be a perfectly satisfactory solution when viewed in isolation as a model or on the drawing board can easily lose all meaning when jostled by half a dozen neighbours.

Without wishing to be unsociable, surely many products could be better appreciated if stand designs themselves were less strident. No one wants to see every stand entirely shut in, but the other extreme—where it is impossible to see what you are looking at without violent interference from half a dozen other interests is surely as bad.

On the whole, the exhibition is much as one had expected—vast, unco-ordinated and terribly wasteful. Of course, the exhibition is a great opportunity for individual firms to sell their goods, and since it is a "free for all"—well, almost free—competition should be unfettered; and yet how much more valuable it would all be, to architects at least, if, as more than one person has suggested, all exhibits of a particular kind could be displayed together.

There is very little sense of urgency at the exhibition and very little evidence of the subordination of private to public interest. This is a criticism, not so much of the exhibitors, as of the whole purpose of the exhibition, and one has only to read the descriptions of some of the stands in trade journals to realize the shallowness and extravagance with which the whole affair is tinged.

Now you may think this is very destructive and that, after all, in these utility times, it is good to have at least a small measure of amusement. However, there is good evidence that a really useful purpose need not preclude plenty of amusement and interest. This evidence is supplied by the Government Departments represented in the display designed by the COI. Here there is a respite from the muddle of individual stands. The display technique is of a very high standard, and what is shown is informative and to the point. The character of the different departments is sufficiently defined, and yet each is contained in a coherent design. Could not each development association contain its range of exhibitors in a similarly restrained layout? The units in the exhibition would then be larger, but there would still be plenty of scope for individuality.

To some extent the COI exhibit provides the "independent" stand, giving information about new products and knowledge for which a plea was made in the JOURNAL for November 17. What is shown is pertinent to our current problems and is very useful. Moreover, the literature is well designed and really helpful. If manufacturers are afraid of wasting their literature, it would be better that they should charge for it than that they should produce useless "give-away" pamphlets which bear little but the name of the firm.

It was indeed surprising to hear the comment of one observer of the COI exhibit to the effect that "all this was all very well before the war." Surely this is applicable to the exhibition as a whole.

There are some remarkably good stands at Olympia, and not all the generalizations made here are applicable to every case; nevertheless, if all the effort and expenditure put into the exhibition is to be worth while, its purpose should be more clearly defined, and the exhibits, rather than the technique of displaying them, should be the most important consideration. If it were possible to make the exhibition more selective, more concentrated and smaller in size, it would achieve its purpose better and be far more valuable. Any afterthoughts would then be less concerned with headaches and sore feet.

Materials and Miscellaneous:

Carter's display of a wide selection of tiles in variations of one group of colours seems a most intelligent idea. Subtle variations of tone and texture are far better appreciated than would have been the case had the manufacturer attempted to show a wide range of types and colours at the same time. I particularly liked the large areas of tile at table level giving the visitor the ideal opportunity to study their qualities with comparative ease.

Could not more well-known manufacturers making products of importance æsthetically adopt this idea? No one would imagine that Carter's *only* make off-white tiles and in any case a selection of single tiles in the full range of colours was shown. The display of paints and other coloured materials could well be made more subtle by showing both general and detail examples. In other words, small non-visual displays showing complete ranges, supported by larger displays having some æsthetic unity.

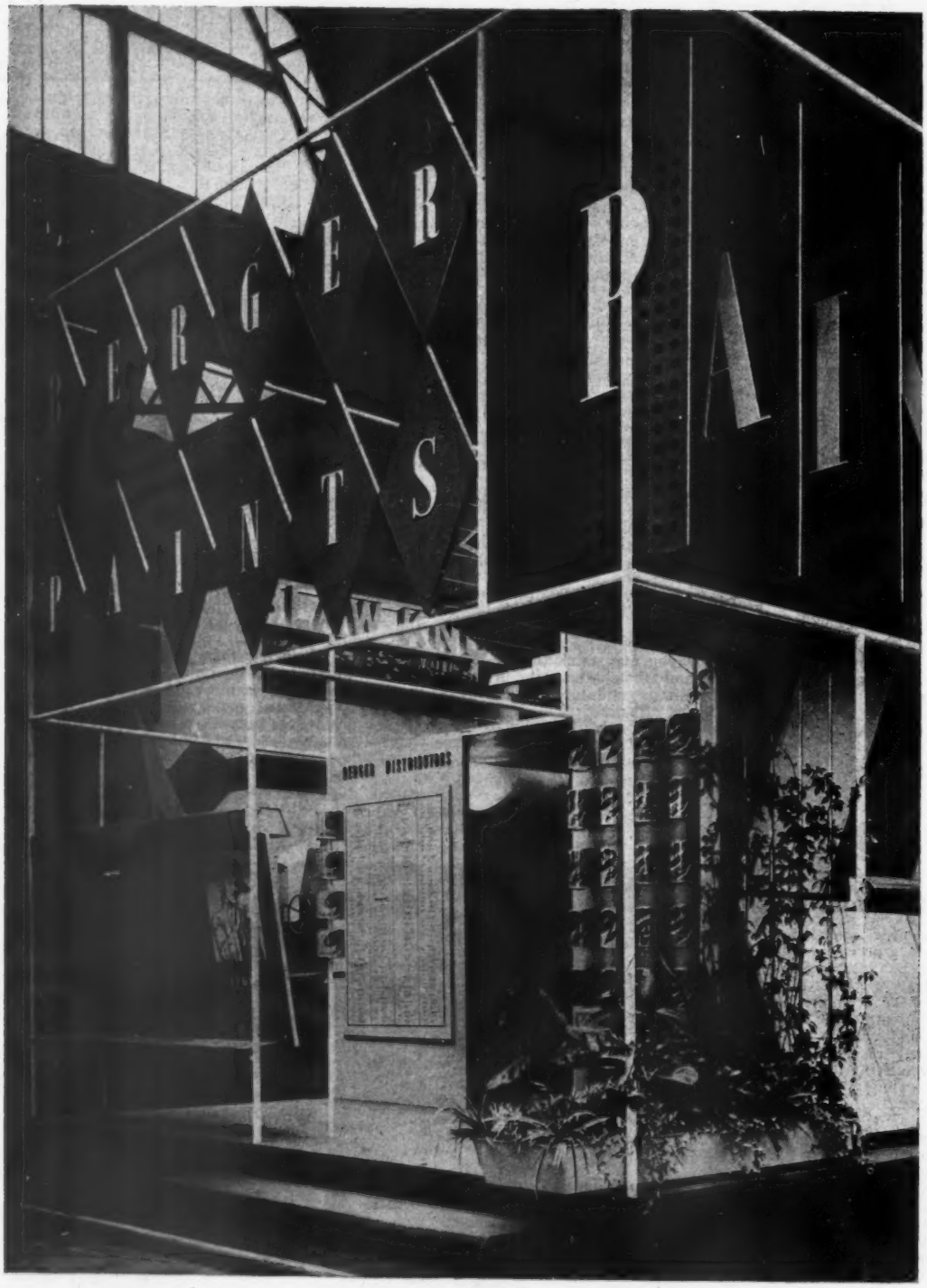
The number of displays of "decorative" materials and finishes in really bad taste continue to decline; nevertheless there are still far too many schemes which show little or no acknowledgment to contemporary developments in the use of colour.

If manufacturers realised more vividly the disastrous effects of a thoroughly vulgar display of an otherwise good material, they would take greater care to avoid the æsthetic crimes which are all too frequent.

The least one can say about many stands is that great opportunities have been missed. Developments in the use of colour have been one of the more exciting post-war developments and what a display



The Building Publicity exhibit, the first ever to be displayed in a Building Exhibition. It is the joint effort of Allardyce Palmer Ltd., and E. Walter George Ltd., and it shows how an advertising agency creates publicity for a product.



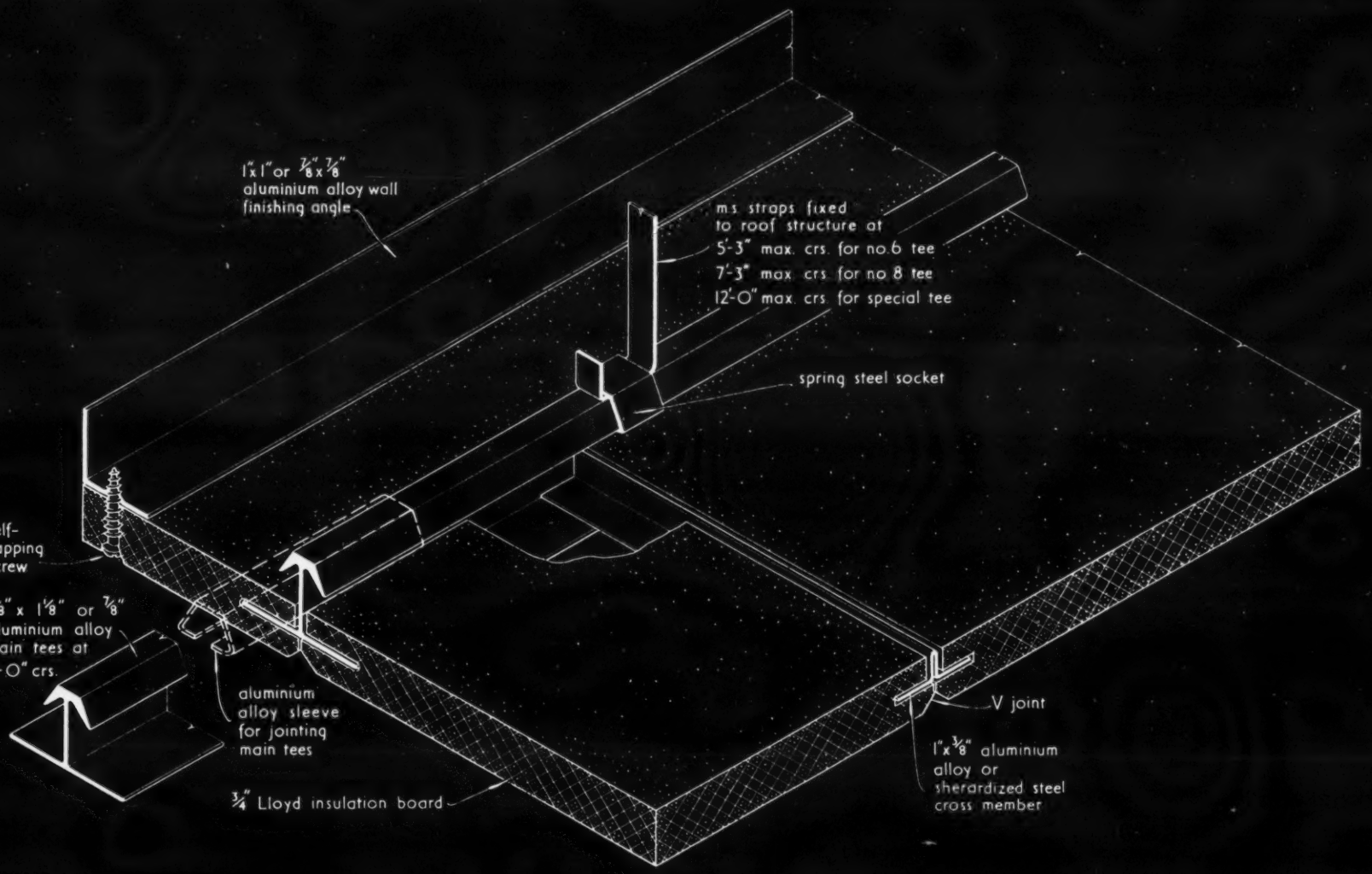
Stand for Lewis Berger and Sons Ltd., designed by Robert Gutmann, of the Design Research Unit. Typography by Hazel Crust. See the JOURNAL *for November 24 for further details.*

STANDS

AT THE BUILDING EXHIBITION



The Architects' Journal Library of Information Sheets 227. Editor: Cotterell Butler, A.R.I.B.A.



GENERAL ASSEMBLY OF COMPONENT PARTS.

LLOYD CONCEALED FIXING SYSTEM FOR SUSPENDED CEILINGS (Patent applied for).

Compiled by C.W.Glover and Partners for Bowaters Building Boards Ltd.

22.D3

22.D3 LLOYD CONCEALED FIXING SYSTEM FOR SUSPENDED CEILINGS

This Sheet describes a system of board fixing for suspended ceilings in which the fixing members are concealed. The ceiling boards are supported by aluminium alloy tee sections suspended by mild steel straps. The boards are supplied in 2-ft. squares, specially rebated to engage the tee flanges, the surface of the board, divided into 2-ft. squares by the V joints, being all that is visible from below.

Components

These are available in two standard sizes; No. 6 for 5 ft. 3 in. maximum spans and No. 8 for 7 ft. 3 in. maximum spans. Special tee sections are available for spans up to 12 ft. maximum.

Main tees: Aluminium alloy: seamless sections in lengths of 8 ft., 9 ft., 10 ft., 11 ft., and 12 ft. They support the boards longitudinally. Sherardized steel tees can also be employed for this system.

Sleeves: Aluminium alloy: for jointing main tees.

Cross members: Aluminium alloy or sherardized steel: seamless sections 1 ft. 11¾ in. long. They support the boards between the main tees.

Sockets: Cadmium spring steel: for joining straps to main tees.

Straps: Sherardized steel: for securing main tees to roof structure.

Wall trim: Aluminium alloy: angle or channel section for trimming boards at wall.

Joints

Variations in the type of joint can be arranged as follows :—

Close V-joint: This is the type of joint shown on the drawing.

Open V-joint: In this joint a gap of about ½ in. is left between the chamfered edges of the boards thereby exposing a strip of the underside of the metal tee.

Stepped joint: By varying the position of the rebate in the edges of alternate boards a stepped or panelled effect may be obtained.

Insulation Boards

For this system the Lloyd ¾-in. insulation boards are supplied in 2-ft. squares, specially cut and grooved.

Thermal Insulation

The ¾-in. insulation board used in this system has a thermal transmittance U value of 0·466 B.th.u./sq. ft./hr./° F., compared with 0·699 B.th.u./sq. ft./hr./° F. for ½-in. insulation board.

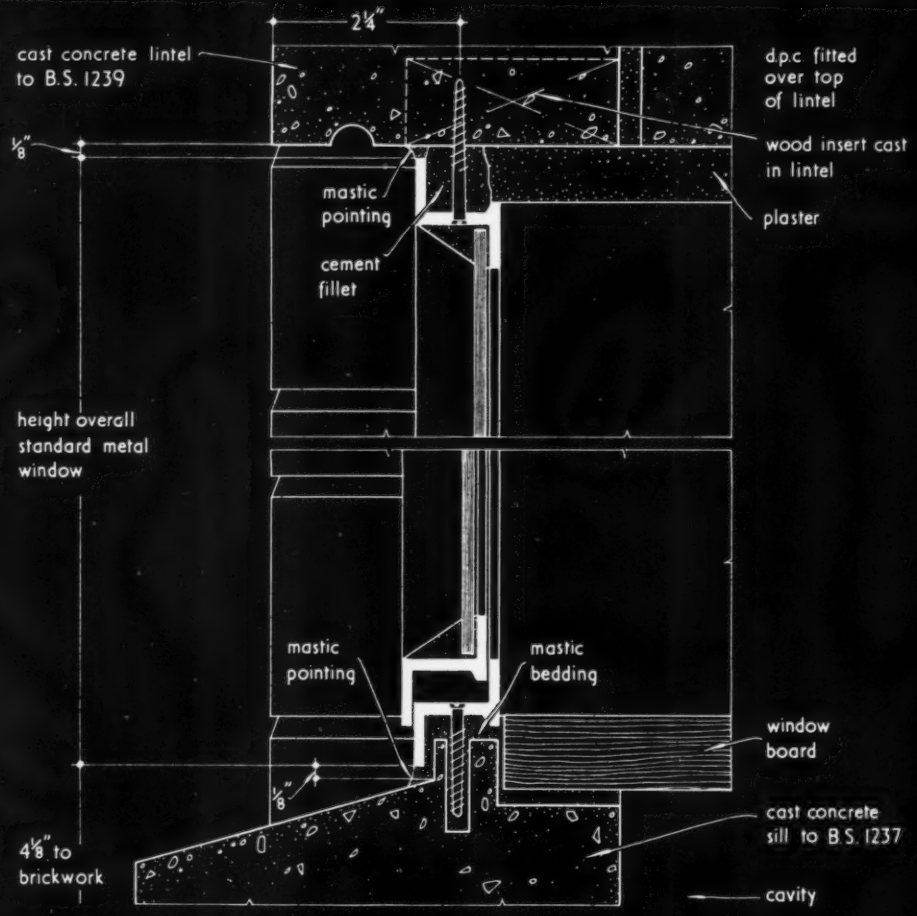
Compiled from information supplied by :

Bowaters Building Boards Limited.
Address : 15, Portman Street, London, W.1.
Telephone : Welbeck 8527.

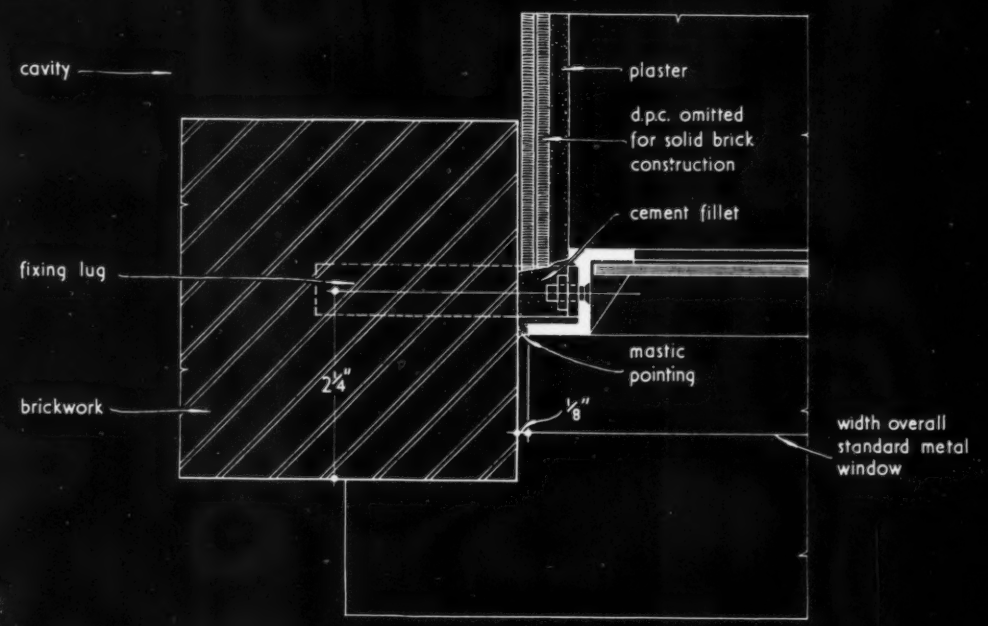
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WINDOWS | STEEL | APPLICATIONS

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SECTION THRO' WINDOW.



PLAN OF WINDOW.

STANDARD METAL WINDOWS FIXED DIRECT TO 11" CAVITY OR SOLID BRICKWORK 2¼" FROM BRICK FACE. (scale: ½ full size)

Compiled from information supplied by The British Metal Window Manufacturers Association Limited

24.D4 STANDARD METAL WINDOWS FIXED DIRECT TO 11 IN. CAVITY OR SOLID BRICKWORK 2¼ IN. FROM BRICK FACE

This Sheet gives details of fixing standard metal windows direct to 11-in. cavity or solid brickwork, the centre line of the window being 2¼ in. from the brick face. Sheet 24.C1 illustrates the method of specifying standard metal windows and Sheets 24.C2 and 24.C3 give standard sizes and types. Further fixing details will be given in subsequent Sheets in this series.

Brickwork Openings

It should be noted that where the sill is as specified in B.S. 1237: 1945, 4½ in. must be added to the total height and ½ in. to the total width of the standard metal windows to determine the sizes of the actual brickwork openings.

British Standards

The cast concrete sill and lintel shown are in accordance with B.S's 1237: 1945 and 1239: 1945 respectively.

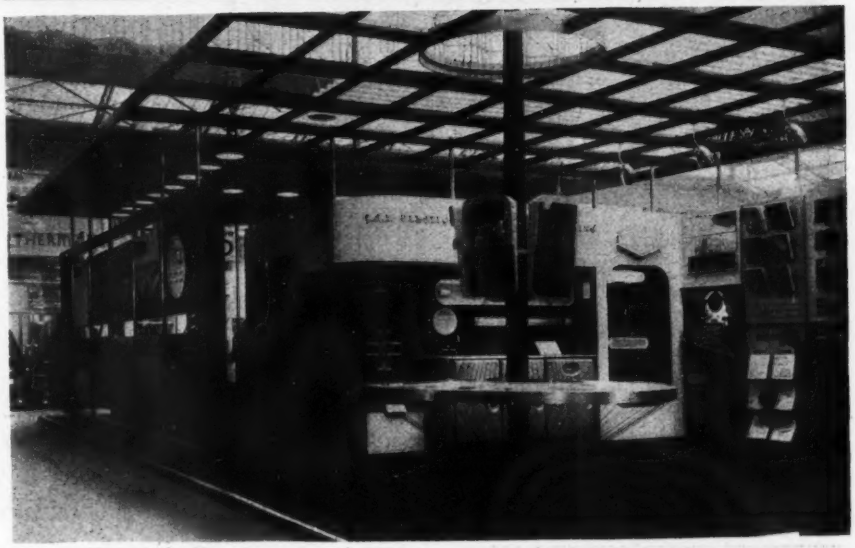
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Address : 2, Great Peter Street, London, S.W.1.
Telephone : Whitehall 9606.

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The Ministry of Health stand, on which appear details of the new Housing Manual, published on November 17. The stand is a section of a combined display designed by the Central Office of Information, illustrating the work of the various Ministries and Government research organizations concerned with the building industry.



The ICI stand designed by Beverley Pick to illustrate the work of the paint, plastic, metal and Billingham divisions of the company. The section illustrated deals with the use of plastics in the Building Industry.



Stand designed for the Crittall Manufacturing Company by F. Rogerson, the winner of a competition organized at the Liverpool School of Architecture. (For further details see the JOURNAL *for November 24.)*



OLYMPIA



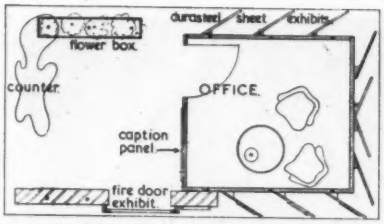
Stand designed for The Merchant Adventurers of London Ltd., by Paul Boissevain and Barbara Osmond. The materials used are copper, brass and aluminium spinnings, polished plate glass, teak, mahogany and plastics. Typical component parts, and light fittings are displayed, with information panels giving technical data on the use of MA light fittings.



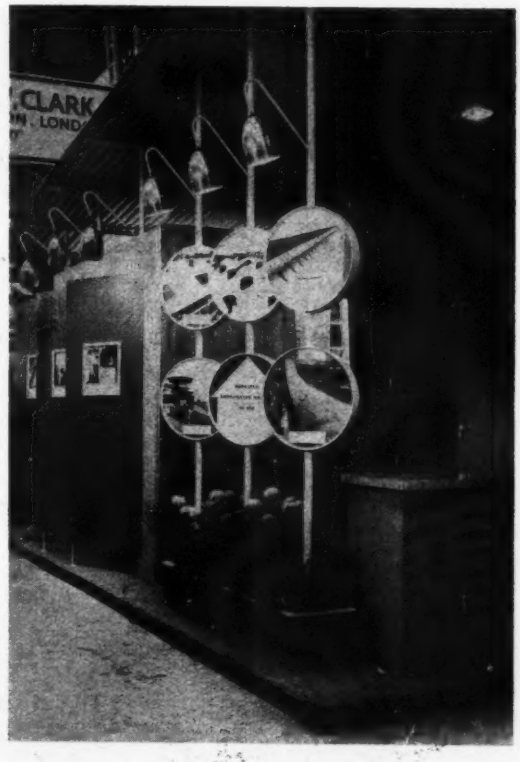
The front section of a stand designed for James Clark and Eaton Ltd., by Wells Coates. (*For further details see the* JOURNAL *for November* 17).

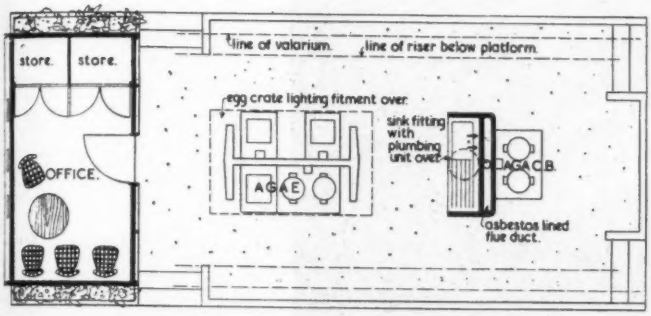
S T A N D S

Right, the stand designed by John Lansdell for Durasteel Ltd.; below, the stand designed by Arthur C. Braven for Messrs. Aga Heat Ltd. (For details of these two stands see the JOURNAL *for November 24).*



PLAN OF THE DURASTEEL STAND
[Scale: ¼"=1'0"]





PLAN OF THE AGA STAND [Scale: ¼"=1'0"]



AT THE BUILDING EXHIBITION



Left, the stand designed by John Lacy for Messrs. Carter and Co. Ltd. (For details see the JOURNAL *for November* 24). *Below: two detail views of the Ruberoid stand designed by Eric Brown and P. H. G. Chamberlain. (For details see the* JOURNAL *for November* 17).





STANDS AT THE BUILDING EXHIBITION

SOCIETIES AND INSTITUTIONS

Speeches and lectures delivered before societies, as well as reports of their activities are dealt with under this title, which includes professional societies, trade associations and government departments. Lectures cannot usually be reported in full, but the extracts given are in the speakers own words.

RIBA

Lionel Brett

November 15, 66, Portland Place, W.1. Extracts from paper entitled SECOND THOUGHTS ON PLANNING. The chairman was Michael Waterhouse.

Lionel Brett : The planner, like the architect, needs to know a little about a lot of things, but, unlike the architect, his guardian angel is not beauty but common sense—a much more familiar and approachable character. Woe betide him, therefore, if he affects to clothe what the common man quite rightly suspects of being a common-sense decision in any kind of mysterious verbiage. The planner, like the politician, should be no superman but a representative; more useful to him than any number of letters after his name is a sense of the complexity and value of things as they are. A good deal of the unpopularity of planners is due to the fact that they are suspected of having at the back of their minds airy visions, shapes of things to come, and a glass and chromium metropolis which nobody wants. The public will not bow to the judgment of a Solomon who is believed to have an unbalanced passion for cloverleaf crossings or community centres. I am inclined to think that if one half of the energy which has gone into the creation of ideal forms had been devoted instead to the education of the citizen in the basic purposes of planning we would all be better off. For this reason posterity will, I believe, rate David Lilienthal, of the TVA, higher than Le Corbusier, of the Ville Radieuse, in the field of activity I am discussing.

The expression "community centre" which crept in just now brings me to another sphere in which the limitations of planning are worth considering. I refer to the planning of social life, a business which would have been considered a contradiction in terms in any other period but our own. Here, of course, we architects speak as outsiders, or, if you like, as philistines, and should show a decent humility. We owe more than we can say to the great students of social dynamics like Geddes and Mumford, and to contemporary social surveyors without whom our knowledge of our unseen clients' requirements would be even hazier than it is. All the same, there are limits, and they are worth exploring. I quote from a recent American report:—

"The orientation of front entrances within court groups has considerable influence on friendship formation. We find that people who live in houses which are rotated so that they face the street rather than the court have fewer friends in the court than do residents of other houses. Indeed, these families . . . seem to have fewer friends and less social life in general."

This, of course, is only a beginning. The next stage is to express this element as a "friendship formation factor," or FFF; one more in the bewildering and ever-growing sets of initials with which one feels it necessary to be familiar. I chose an American example just now because a great deal of our sociological jargon comes from there. That is natural enough. A young society is bound to be socially self-conscious, and to think hard about how to change and improve a structure which is not yet fixed and firm. But things are different here. How many well-intentioned plans have foundered on the obstinate determination of the Englishman to erect shacks in his back garden, to live in his kitchen, and to boycott cycle tracks?

We ought, I think, to look at these prejudices more closely, as they are of the greatest significance. At the moment one's general impression is that they are anti-social. We find resistances to terrace houses, to flats, to shared open spaces, and to the removal of lonely and socially moribund agricultural settlements. We conclude that the English are congenitally unco-operative and ungregarious. But if we look back a hundred years, or even fifty, what do we find? A drift to the towns, where life was intensely matey though squalid, and, above all, a stolid resistance to the healthy if draughty puritanism of the Garden City reformers. The grubby sociability of the slums seemed just as awkward an obstacle to our predecessors as the snooty isolationism of the suburbs seems to us. I wonder whether it often occurs to planners that it is not the public who keep changing their minds but they themselves.

THE SOCIAL PENDULUM

My chief complaint against social planning is, therefore, that it keeps changing its emphasis. The raw material; namely, the human family, remains the same all through and the astonishing thing is the infinite variety of ways in which it is induced to live, move and have its being. It will be said that we are obliged to emphasize those aspects which were neglected by our predecessors, that our present attempts at social integration, for instance, are an answer to the social disintegration of the pre-war housing estate, which itself was an attempt to break up the anthill slum. And so on back and forth swings the dreary pendulum, and some people firmly believe that the clock can only be kept going this way.

Fortunately, civilization with its deep roots and infinite complexity has a momentum of its own. It has, if you like, an organic existence to which the mechanical analogy I have just used is quite inapplicable. Just as social life has this mysterious and elusive basis, so it is generally held, has visual beauty. We are bound therefore to look critically at any system of organizing, controlling or censoring the appearance of buildings.

That some sort of architectural discipline is necessary seems obvious enough. I am going to put up a set of principles for this business, and then argue in their favour.

First, then, let us accept an absolute control over the location of new buildings, and in towns over their floor space and daylighting. Nobody pretends that this control has any positive æsthetic value, but it often has a desperately urgent negative part to play. If we quarrel with the planning authorities on this score, it is not that they are too rigid, but that they are nothing like rigid enough. Their NO arrives too often wrapped up in YES's.

But, secondly, I do not think the designs of architects ought to be censored on æsthetic grounds by non-architects, and I hardly think it necessary to defend this principle. The difficulty here, of course, is that the profession is not yet quite closed. When it has become so will surely be the logical moment to lift this control, under which no self-respecting designer can be expected to work.

We come now to a far more difficult question—how to deal with the great mass of small buildings, and often more important small alterations, which are not carried out by architects at all. We all want to see this great mass shrink, but meanwhile what should we do with it? I do not see how we can preach visual education one day and practise visual censorship the next. Or rather I see how we can, and that there is no more rapid route to the Nazification of our art. If we are aiming at a visually educated democracy there is only one way, and that is to teach people to use their eyes and then accept their judgment however much we disapprove of it. With power goes responsibility and if we bestow the first we must not withhold the second.

The way this question of æsthetic control has so far been handled is typical of a lack of refinement in the whole planning machine, which is, naturally enough, its outstanding characteristic at the moment. Development control is ready enough to chase the small man around, but quails before the big man, particularly if he is backed by the Board of Trade, the Ministry of Fuel and Power or the War Office. It is of the nature of physical planning that its failure should be more spectacular than its successes. Still, making every allowance for this, it is a grievous disappointment to find the regional machinery so weak, to find London, for instance, still growing in spite of the categorical decision taken in 1944 to stop its further growth, and growing in its old haphazard way. If, on appeal to the highest authority, hydro-electric stations and pipelines are to be allowed to industrialize Snowdonia, cement works to dominate the Peak, and the isle of Purbeck to be turned into a desert by obsolete weapons of war, the plain architect, financially innocent as he tends to be, begins to wonder what is gained by all those forms he fills up. There have been since the war a depressing number of projects which have had to be palliated by assurances that the elevations will be designed by a distinguished architect and approved by the Royal Fine Art Commission—a danger signal which nearly always means that somebody is flouting the elementary rules of industrial or rural zoning.

THE PLANNER'S TASK

The planner suffers more than anything because in a world of increasing specialization he is the one official generalizer. At any public enquiry the rest of the expert evidence is technical enough to impress the Inspector, let alone the public, but "sound planning principles" are no sooner enunciated on one side than they are contradicted from the other. As against the man who can state that a thing is technically impossible, the planner can often only say that it is injurious to amenity—a milk and water statement in all conscience. Undoubtedly the remedy for this state of affairs will be found in increasing specialization inside the planning profession. This is only another way of saying that the planner must recognize his limitations and try to operate inside them.

MOW

R. Fitzmaurice

November 14. Paper on CHANGES IN BUILDING TECHNIQUE. 66, Portland Place, W.1.

R. Fitzmaurice : If the term "machinery" is used in its widest sense, the object of almost every change in technique of building has been to make greater use of machinery in order to increase production and to lower cost. In Britain the process began in the period between the wars. Machines were not extensively used on smaller building sites but many components for building of all kinds were made in factories by highly mechanized processes. There was considerable opposition to their introduction at first, but a number of components quickly established themselves on account of their low cost and excellent quality.

The Ministry of Works played a part in development work of this kind. It set up an organization for the development and testing of mechanical equipment for the building industry, known as the Field Test Unit. The process of development follows a logical pattern; an analysis is made of the actual labour employed on the various operations in building; this analysis shows where there is some likelihood of a machine being useful and the performance of the machine can be specified at that stage, including the amount of money the operation can carry if the machine is to justify itself. A concreting skip attached to a small agricultural tractor, which is shown in Fig. 1, has just come very successfully through a field trial. For the foundations and ground slab of a small house it is necessary to place anything from 4 to 8 cubic yards of concrete. This material is normally wheeled from the mixer in barrows to its position in the foundations, where it is tipped and spread. The output of the mixer is controlled by the rate at which the barrows can remove it, and the fresh batch cannot be introduced into the mixer until all the previous mix has been removed. By designing the skip so that it is low enough to take the discharge from the mixer and big enough to take the whole batch, it is obvious that the mixer is free from the moment of discharge. The small tractor, which is a standard agricultural machine slightly modified, can negotiate the roughest site and can dump the concrete right into its final position. The trial showed that the labour distributing the concrete could easily be halved but at the same time the output of the mixer could be doubled.



For the small site it is always a problem to find continuous employment for a machine, so that it is desirable, wherever possible, to devise multi-purpose machines. Fig. 1 shows the tractor fitted with a dozer blade which enables it to be used for backfilling trenches or cleaning up piles of concrete aggregate. Fig. 2 shows it fitted with a small hoist by which means it can be used as a stacker to load an upper stage with bricks or other materials.

Another simple device for distributing concrete over the site of a pair of small houses is shown in Fig. 3. This consists of a light boom carrying a travelling skip. The end of the boom adjacent to the concrete mixer is fixed and the other end can be moved to cover any part of the site. In the model of this device, which is going into production, the boom will be made of aluminium alloy.

In addition to the development of this type of machine a start has been made in Britain in the application of the jig for setting out to traditional building.

The traditional method of building walls is, of course, to set up the corners in brick or block by means of a plumb rule, and to fill in with bricks or blocks which are laid to a line which is levelled to the joints at the corners. In Holland, which is a country with a tradition of fine brickwork, they normally build their walls to profiles which are set up at the corners. On the information at present available there is reason to believe that productivity in bricklaying is higher in Holland than in most other European countries, and the use of the profile may be one of the factors making for this higher productivity. The idea can, however, be taken a stage further and the plumbed profiles transformed into a complete jig; there is then a possibility of speeding-up wall construction but also of producing a building carcase accurately dimensioned. This immediately opens up quite an exciting range of possibilities because precision-made assemblies of components can be introduced into an accurately dimensioned shell. Partition units, plumbing and heating assemblies, wiring assemblies, stairs





Top, Fig. 1, an agricultural tractor fitted with concreting skip and dozer blade. Left, Fig. 2, the tractor fitted with a hoist. Above, Fig. 3, a light boom, carrying a travelling skip, for distributing concrete over a small site.



Fig. 4, a jig in use.

and joinery should fall into position. Second fixings could be enormously reduced. The jig is being exploited in Britain and it may well prove that an important revolution is being introduced. It is shown in Fig. 4. The results obtained to date have been highly satisfactory both in respect of productivity and cost but the quantitative assessment of the possibilities of the jig for general application has still to be made.

Now let us consider the various methods which have been the subject of experiment in Britain for the erection of complete house structures. The trend of development has gone through various phases. The first types were based on the production of a framework to which an external covering might be quickly applied. A typical example of an economical steel frame is shown in Figs. 5 and 6. Several variants were also produced based on reinforced concrete frames. Few of these houses were conspicuously successful. The loading in a small house is very light, and it is difficult to design a practicable frame for such light loads. Another difficulty is that of fixing linings and other components to steel and concrete, and many of the steel frames have included wooden sub-frames for fixing purposes, so that the quantity of wood required has often been sufficient to produce a load-carrying wooden frame.

By drastic economy in the use of wood it has been found possible to produce a wooden-framed house with wall and floor units made up in large panels for quick assembly. This house in shown in Fig. 7. The result is interesting because the quantity of wood required has been reduced to the very small amount normally allowed for a traditionally built brick house.

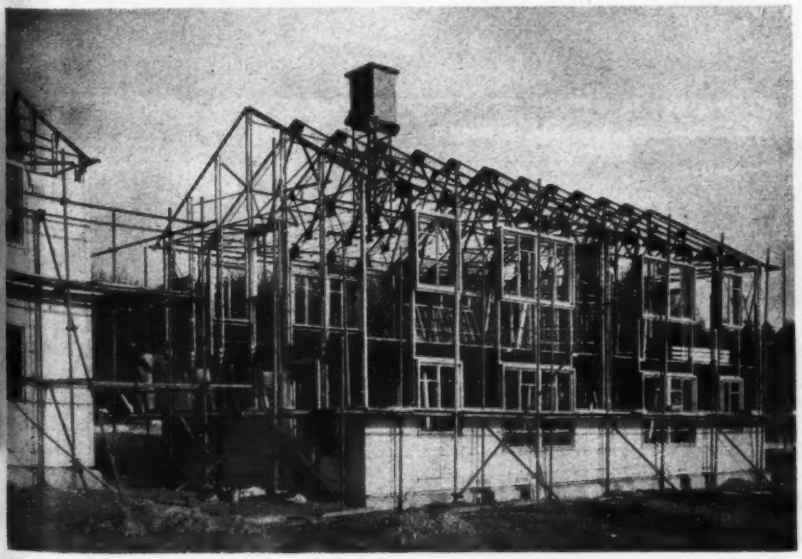
Large precast concrete panels for wall construction have been used successfully, and a house of this type is shown in Fig. 8. The panels in this house are assembled around a tubular steel jig, which is removed when the panels have been placed. Houses with concrete walls cast *in situ* have to be regarded as non-traditional in Britain. In these cases success depends on the design of the formwork to allow of rapid erection and dismantling. A good system of formwork will perform the function of a jig, and it should be possible to fit accurately dimensioned components into a shell which has been built in this way. The extent to which this will prove successful has yet to be established, but a large-scale contract is just being started in Scotland at the present time based on a "No-fines" concrete shell.

It may be convenient at this stage to look at some of the figures which are typical of the results obtained to date with new methods of house construction. For those who may wish to have fuller details, the work is described in National Building Studies, Special Report No. 4, HMSO, price 1s. net, and a supplement to this report which is now in the press. Observations of site and factory man-hours were taken for groups of not less than 50 houses, and the results have been analysed statistically. Some typical figures are shown in the table below.

To facilitate comparison of costs, figures have been included for traditional houses. It must be emphasized that all the figures can only be used subject to the reservations attached to them in the published reports. In all, eight out of the thirteen new systems of house construction examined require significantly less site labour than the traditional, *i.e.*, Types 10, 11, 13 and 14, together with four types investigated earlier. Type 12, with the organization applied to it on that site, requires significantly more site labour than the traditional. Type 8, of an earlier series, is a borderline case, and Type 5, of an earlier series, is

House type No.	Description of wall construction.	Tons of coal required (total per house)	Factory man-hours (walls only actual)	Site manhours (total per house *ex* ancillaries)	Prime cost (total per house)
9	Light timber frame. Fibre glass insulation. Plasterboard lining. 4½-in. brick external cladding in latest houses	6·0	345	1,660 ± 215	£1,020
10	Steel frame, external cladding of precast concrete panels. Internal lining of wood-wool	11·09	445	1,845 ± 150	£1,080–£1,110
11	Steel frame, external walling of prefabricated panels 2-storey high, of timber framework covered partly with aluminium sheeting and partly with rendering on steel mesh	11·21	380	1,780 ± 130	£1,030
12	No-fines concrete external walling cast *in situ* in special shuttering supported by timber shoring	10·60	230	2,570 ± 210	£1,105–£1,190
13	Large crane-handled reinforced concrete cavity units, with cast *in situ* columns and girdle beams. Internal fibre-board lining cast with units	6·81	405	1,090 ± 240	£1,015–£1,110
14	Precast lightweight concrete posts and panels. Panels in two leaves of 2 in. each. The inner leaf finished internally in fibreboard. All units manhandled	7·70	225	1,770 ± 200	£1,035–£1,140
	*Traditional (Fletton brick)	8·51	285	2,140 ± 95	£1,015
	*Traditional (national average non-Fletton brick)	15·55	285	2,140 ± 95	£1,015
6	Large precast concrete external wall elements just capable of being manhandled	7·75	300	2,320 ± 175	£1,060–£1,120
2	Concrete cast *in situ*, No-fines concrete external walling in special shuttering, storey height	7·5	260	1,875 ± 125	£940

Notes.—These figures are indicative only and they should not be rigidly applied without the qualifications attached to them in the earlier Tables from which they are extracted. * If cement bricks were used the fuel requirement would be about the same as those for Flettons.





Left, Fig. 5, and above, Fig. 6, typical examples of an economical steel frame. This type was the first in a series of experiments carried out to develop frameworks to which an external covering might be quickly applied.

not better than the traditional house. These same eight types are also better in total labour on site and factory than the traditional house. With regard to cost, Type 13 and Types 1, 2 and 3 are cheaper than the traditional house; others have costs which range around, or are slightly higher than, the cost of the traditional house. Type 13 provides the outstanding feature of the results. It can be cheaper in cost than the traditional house of comparable size and introduces really large economies in manpower.

The results in labour requirements on the site for Type 4 and its slight modification, Type 14, shows no significant differences. This reflects the ability of the method of observation and analysis which has resolved the problem of inter-site variation and gives results applicable to the system of construction. There is also the implication that in the case of Type 4 (or 14) no great improvement as far as labour requirements are concerned can be expected without further changes in method.

To summarize, the methodical study which has been made of house-building by new techniques has yielded results which have been disappointing in some ways, though highly significant in others. The actuating theory has been that structural components should be made to accurate dimensions in factories and that they should then be assembled on the site with a minimum of labour. In fact, the expected economies in labour have been achieved quite handsomely. The components have been made accurately and they have been assembled quickly and easily, but, and here is the pity of it, all this ingenuity has been lavished on the main structural components —mostly the walls—and it is a matter of common knowledge that the shell of a house represents at most a third of the total cost and labour element.

However, a new system has now been introduced in Britain. About 100 houses have been erected, using the system devised by the architect, G. Schindler, of Zurich. Here, prefabricated and highly-finished panels comprising all interior linings and partitions are made in the factory. The framing of the panels provides formwork for a system of concrete posts and beams. The panels are assembled together on the site and the concrete is poured in the posts and beams. The external weather-resisting shell is then applied in any desired material. (See Figs. 9 and 10.)





Top, Fig. 6, a wooden framed house. Centre, Fig. 8, a house being constructed of precast concrete panels. Bottom, Figs. 9 and 10, a new system of building using prefabricated highly-finished panels comprising interior linings and partitions.





INFORMATION CENTRE · INFORMATION SHEETS
QUESTIONS AND ANSWERS · CURRENT TECHNIQUE
THE INDUSTRY · PRICES · TECHNICAL ARTICLES

TECHNICAL SECTION

A digest of current information prepared by independent specialists; printed on one side of the paper only, to allow readers to cut out the items for filing and paste them up in classified order. Headings below.

INFORMATION CENTRE

1 SOCIOLOGY. 2 PLANNING: General. 3 PLANNING: Regional and National. 4 PLANNING: Urban and Rural. 5 PLANNING: Public Utilities. 6 PLANNING: Social and Recreational. 7 PRACTICE. 8 SURVEYING, SPECIFICATION. 9 DESIGN: General. 10 DESIGN: Building Types. 11 MATERIALS: General. 12 MATERIALS: Metal. 13 MATERIALS: Timber. 14 MATERIALS: Concrete. 15 MATERIALS: Applied Finishes, Treatments. 16 MATERIALS: Miscellaneous. 17 CONSTRUCTION: General. 18 CONSTRUCTION: Theory. 19 CONSTRUCTION: Details. 20 CONSTRUCTION: Complete Structures. 21 CONSTRUCTION: Miscellaneous. 22 SOUND INSULATION-ACOUSTICS. 23 HEATING, VENTILATION. 24 LIGHTING. 25 WATER SUPPLY, SANITATION. 26 SERVICES EQUIPMENT: Miscellaneous. 27 FURNITURE, FITTINGS. 28 MISCELLANEOUS.

11.19 materials: brick
BRICK ROAD

Brick Road. (British Clayworker, Oct. 15, 1949, p. 176.)

Short report on the condition after 25 years of a trial section of the main Ruabon-Shrewsbury Road constructed of bricks in 1924 and which carries heavy traffic daily.

Notes from the "British Clayworker" of May, 1924, suggest types of clay suitable for the manufacture of paving bricks. Unfortunately no indication of the foundation under the bricks is given.

12.40 materials: metals
STAINLESS STEEL

Structural Applications of Stainless Steel. Richard E. Patet. (Progressive Architecture [USA], Oct., 1949.)

Four-page general article on stainless steel. Some useful information on properties, with a few examples of usage.

16.56 materials: miscellaneous
PATENT GLAZING

Patent Glazing. Draft BS C of P 145.101. (British Standards Institution, 1949. 2s.)

General description, design requirements, materials and fixing.

Although there is nothing very new about the information given in this draft code there are notes on light transmission and heat transmission which are useful, and reference to a number of points of detail in design and fixing which serve as reminders of what is good practice. A useful general reference.

16.57 materials: miscellaneous
BRICKWORK

The Architecture of Brickwork in Holland. Ian Colquhoun. (Architectural Association Journal, Oct., 1949.)

A study of Dutch brickwork designs with interesting observations on historical development. 7 pp. Illustrated.

The author discusses the development of design in brickwork in an interesting and informative way, emphasizing the nature of the materials, including their shape and colour. A useful study of a kind that is too seldom seen.

18.32 construction: theory
MOMENT DISTRIBUTION

Structural Analysis by Moment Distribution. S. Butterworth. (Longmans, Green & Co. Ltd., 1949, price 10s. 6d.)

Structural analysis free from higher mathematics applicable to indeterminate structures.

The classical methods of structural analysis of indeterminate structures are rather laborious and often require the use of higher mathematics or at least the solution of a fair number of simultaneous equations. A new method known as the method of moment distribution was published by Professor Hardy Cross in USA in 1929. In the application of this method simple arithmetic only is needed. It is a gradual approximation in a tabular form by which any desired degree of accuracy can be obtained.

The new method is widely used in USA and is becoming increasingly popular in this country.

The present book deals with the subject in a very clear manner and gives the solution of continuous beams and rigid frames of various types. Many examples with diagrams and tables and a good bibliography are included. The book has been written mainly for students and can be recommended to architects who wish to make themselves familiar with the analysis of indeterminate structures.

19.79 construction: details
FOUNDATIONS

Building on Made-up Ground or Fillings. (BRS Digest No. 9, 1949.)

Factors to be considered in assessing suitability of existing made-up ground for foundations. Principles governing placing of new filling to give best support in a short time.

The materials used for filling and the uniformity of their composition are important. A good fill is one which is uniform and consists of hard and durable materials not subject to breakdown by weather or chemical attack and which can also be placed in a compact and dense condition which requires little consolidation. A well-graded material is best and the smaller the predominant particle size the longer the time required for natural consolidation. Clay takes a long time to settle. Mixed fills give unequal settlements and household rubbish is poor. A large proportion of combustible material may lead to spontaneous combustion and underground fires which may pass unnoticed.

Information on the shape of the fill is essential as varying depths will give varying settlements. Placing in even and shallow layers gives the best results. Depths of not more than one foot are best and should be accompanied by compacting at a water content which gives the greatest density. Rate of consolidation is improved if the ground below the fill is naturally well drained.

The Digest goes on to consider site investigation of filled ground and to discuss, in general terms, the design of foundations. Ordinary footings are unlikely to be satisfactory but rafts are often good and either a raft or pile foundation is common. If footings are considered safe they should be well reinforced in both directions. Special care is needed where foundations occur near the edge of filled ground.

The Digest finishes with notes on the placing of new fill.

28.12 miscellaneous
SCREWS

Unified Screw Threads. BS 1580 : 1949. (British Standards Institution. 7s. 6d.)

Though of little immediate value to architects this specification is of importance in that it represents a successful conclusion to many years work in negotiating agreement for one standard for USA, Canada and Britain. At present it relates only to threads of ¼ in. diameter and over.

This feature answers any question connected with building confidentially and free of charge. Questions to the Technical Editor, The Architects' Journal, 9, 11 and 13, Queen Anne's Gate, S.W.1.

QUESTIONS AND ANSWERS

3008 MAXIMUM SELLING PRICE OF A HOUSE

Q *A licence to erect a house and shop was issued by the local authority in September, 1948. It was accompanied by a letter stipulating a maximum selling price and rent. In October the local authority wrote cancelling the licence, saying it should have been issued by the Ministry of Works and asking for return of licence. A new licence was issued by the Ministry of Works, but without any stipulation about selling price or rent—only the value of the work being given. Do you consider I am free to sell the property on completion and without price restriction?*

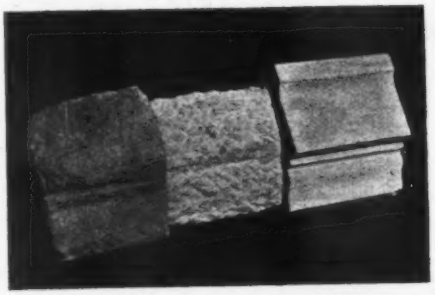
A In our opinion the maximum selling price and rent fixed by the local authority in the letter which accompanied the building licence is still applicable, although the building licence has now been granted by the Ministry of Works.

Under the Building Materials and Housing Act, 1945, section 8(1), the local authority must register the condition as to maximum selling price and rent as if it were a local land charge, and I think this would have been done when they granted the licence. An enquiry at the local authority's offices would confirm this. When controlled premises are put up for sale, a prospective purchaser's solicitor makes enquiries of the local authority as to any conditions.

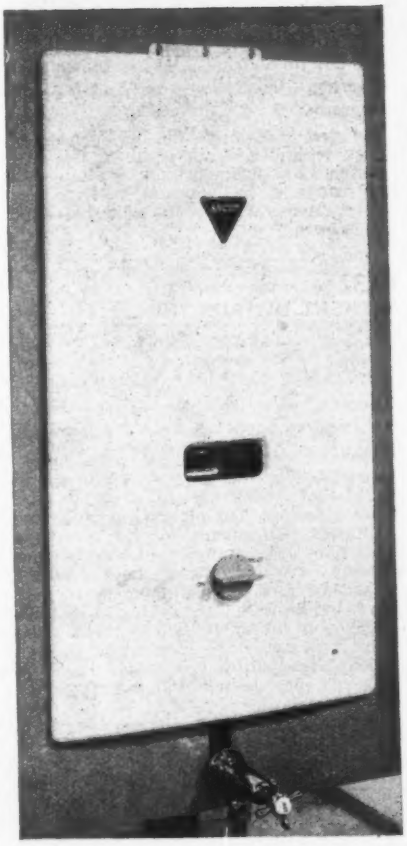
This feature covers both the production and marketing of new materials and designs of equipment, as well as the general trend of developments within the Building Industry.

THE INDUSTRY

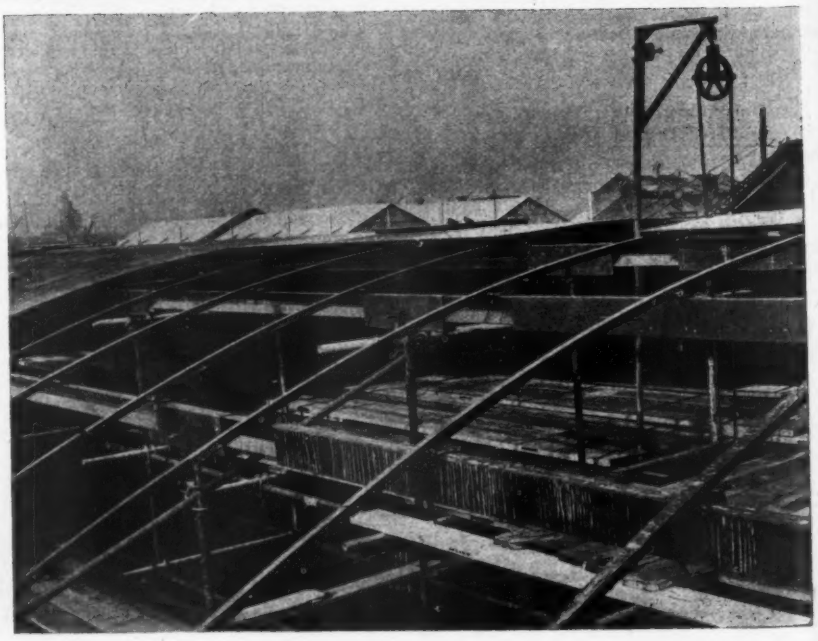
By Brian Grant



Left, an example of the work of the Universal Cleaning and Restoration Co. The model shows stages in the repair of decayed stone, which is cut back, keyed and holed for cramps, with the completed repair on the right. Below, two views of the Ascot Balanced Flue Multipoint Gas Water Heater, with and without cover. Bottom, the Kwik form shuttering for barrel vault roofing.







THE BUILDING EXHIBITION

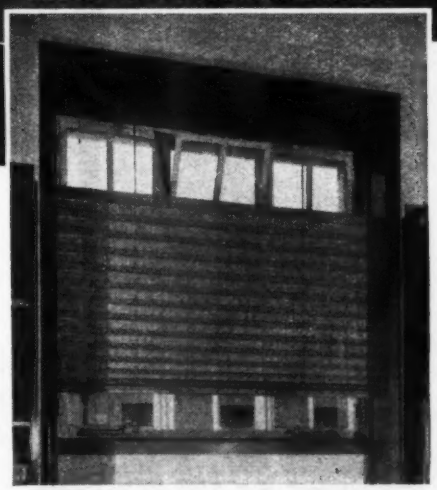
One of the most interesting developments at Olympia for the use of the contractors is the shuttering which Messrs. Kwikform have evolved for use with barrel vault roofs. This type of construction is, of course, being used a good deal nowadays, largely because of the very considerable savings in steel which are possible. From the contractor's point of view, however, the necessary shuttering offers a considerable problem, and it is perhaps not far from the truth to suggest that the future use of roofs of this type will depend very largely on the extent to which this problem is solved. The essential requirements are that the formwork should be reasonably flexible, so that it can be used for vaults of different radius, that it should show a minimum of marks in the vault when struck, and that the necessary scaffolding should be spaced as widely as possible to give free access to the whole area. Kwikform's patented system has been evolved from their standard steel wall and beam shuttering, and is best understood from the photograph shown on this page. Steel T sections are curved to the necessary radius and joined with fishplates. These T sections rest on telescopic Spanform members, which are in turn carried on scaffolding and split head adaptors which can give a fine adjustment by hand, the final lining-up being done by jack-screw adjustment. Flexible steel forms (known as Flexforms) are then fixed to the curved T sections by special friction clamps, and, as one long edge of each form has a joggled flange, each form unit (3 ft. 6 in. by 2 ft. 6 in.) pulls down the one next to it, so that the surface for concreting is exceptionally smooth and gives a good finish. At the same time it is, of course, possible to lay wallboard on the shuttering for insulation. (*Kwikform Ltd.*, 194, *Waterloo Road, Birmingham* 25.)

Not new, but of interest, is the Smith floor, illustrated on the next page. Laid on patent telescopic centreing, which does not interfere with the progress of work on the floor below, the floor is reinforced in both directions. The floor consists of hollow concrete tiles, blind at one end, and when these are laid with the open ends together they form a closed box unit 18 in. square. Between adjacent units a channel is formed which is sealed at the bottom. Into this the concrete is poured after the reinforcement has been fixed. Any point load on an individual beam is transmitted through the lateral beams to adjacent members, which are less loaded. Tests have shown that a 5 ton load on 4 sq. ft. in the middle of a 15 ft. floor span, designed for a load of 1 cwt. per square foot, produced a deflection



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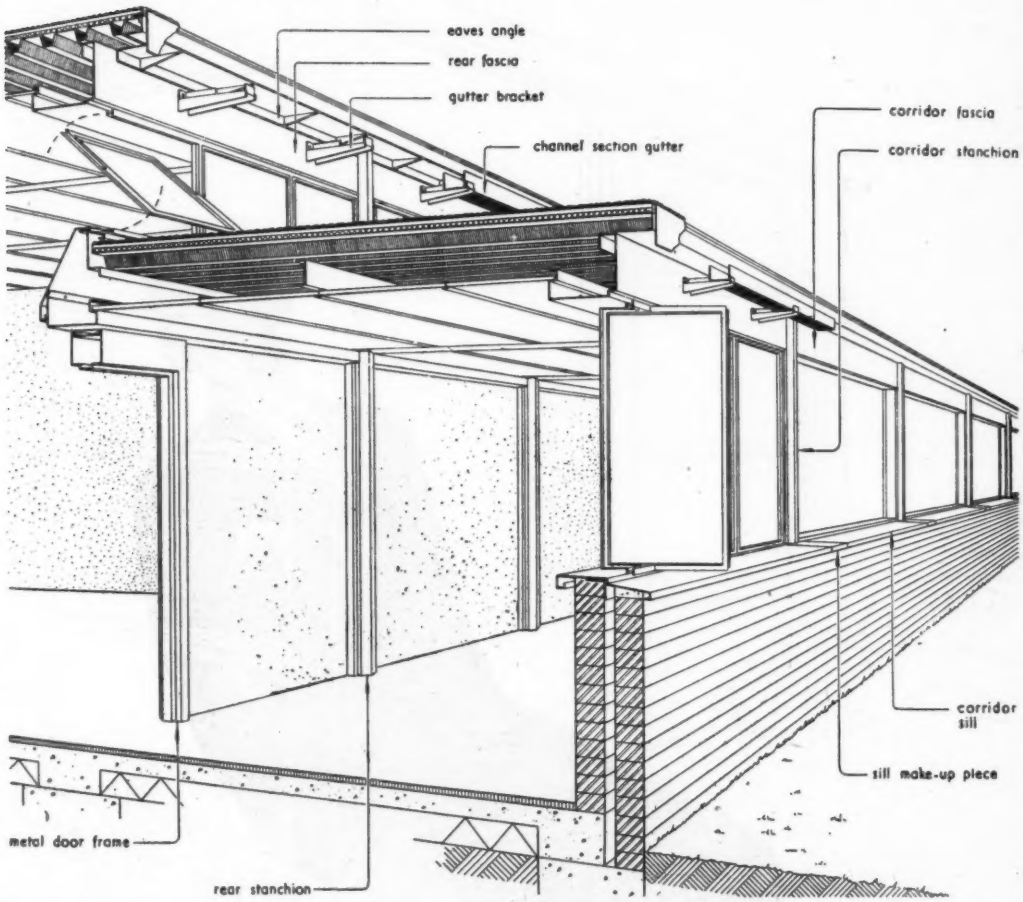
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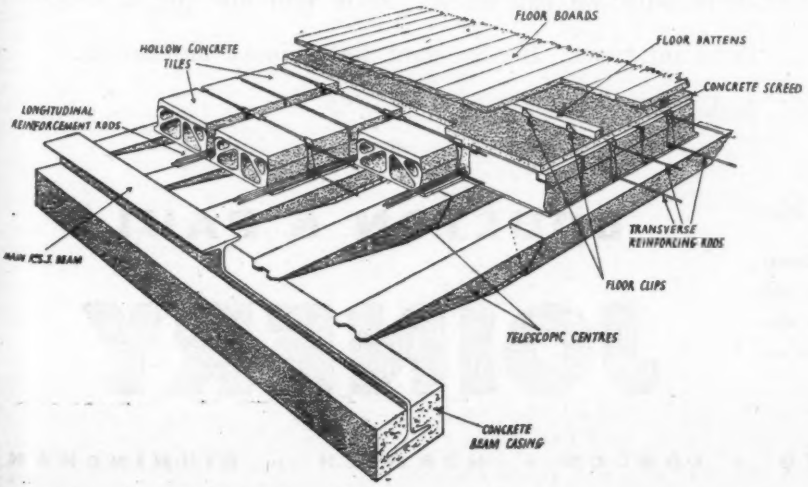




Right, section through a prefabricated school built mainly in sheet steel and aluminium. This has been evolved by the Morris Singer Company. It is based on the two-dimensional grid of 8 ft. 3 in. or 7 ft. 6 in. recommended in Post-War Building Studies No. 2 and is known as the Holoform system of construction. Above, the Global tap.

of only one-twentieth of an inch, which disappeared on the removal of the load. With the present-day type of office building, which consists mainly of floor space to be subdivided in accordance with the tenants' requirements, it is not at all uncommon to find a 2 ton safe carefully placed in the centre of the longest span, and a floor which will deal with loads of this kind is of considerable value. (*Smiths Fireproof Floors Ltd., Trianco Works, Imber Court, East Molesey, Surrey.*)

One of the main arguments put forward by the electrical interests has always been the fact that electric fires and immersion heaters need no flue, and are therefore economical to install. I have already referred in these notes to the Ascot balanced flue water heater, which was first shown in its earlier experimental form at the Ideal Home at the beginning of this year. Cowper-Penfold are making a room heater on the same principle. The fact that there is no need to take a flue to roof level with gas heaters of this type should make for economies, particularly in large flat blocks. Although Ascot's balanced-flue water heater is not yet in production, it seems worth illustrating the built-in model, shown for the first time at Olympia. It will not be in production until the middle of next year, and, provided that the various valves and water passages are as easy to get at for servicing as they are in the surface-mounted types, the idea of a built-in heater seems admirable, especially as the balanced-flue principle allows the overall dimensions of the heater to be somewhat smaller. So far as appearance is concerned, I am relieved to see anything which avoids "styling." Good. (*Ascot Gas Water Heaters Ltd., 43, Park Street, London, W.1.*)



sometric section of Smiths' Fireproof flooring.

Various kinds of tap, which have an automatic cut-off valve so that re-washering can be done without turning off the water, have been described in these notes from time to time. At Olympia there was another, known as the Global. Apart from the Bourner tap, which is claimed to need re-washering at intervals of thirty years, the other types have a normal jumper, which, as usual, needs two pliers, one to hold the jumper and the other to undo the small nut holding the washer. In how many households are there two pliers, even assuming that someone remembers where the spare washers have been hidden? The Global tap carries three spare washers in the head, which also acts as a key for changing them. A practical idea, though perhaps not everyone will like the design of the tap. (*Hyspecon Ltd., 6, Stanley Park Road, Wallington, Surrey.*)

THE BUILDING CENTRE REVISES ITSELF

At the beginning of this week the Building Centre announced certain changes in its internal organization; these make no practical difference to the architects and others who use it as a source of information, and really do little more than regularize a state of affairs which has always existed. In the early days the Building

(*Continued on page 632*)



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CRC 2

BUILDING MATERIALS' PRICES

By Ian Bowen

The movement of the price index since the end of the war, August, 1939 being taken as the base date, is shown in Table I. The latest figure, for the middle of the fourth quarter of 1949, is 212·2. This is 3·8 points higher than the figure for the third quarter, although, as will be shown below, devaluation has by no means had its full effect. The index is back almost to its level for February this year; the downward trend has been sharply reversed, at least temporarily.

Some forces are still, however, operating in the contrary direction. Of the 44 price quotations covered by the index 32 have not changed between the third and fourth quarters, nine have moved upwards, but three have actually fallen. These three relate to corrugated roofing sheets (−3·6 per cent.), linseed oil putty (−3·5 per cent.) and plasterboard (−1·8 per cent.). In terms of their effect upon the index the most important items which have risen in price are white lead for paint and lead piping. There were also increases in the prices of several metal goods—hot and cold water tanks, taps, ball valves and screws. The price of cement has risen for deliveries in the London area, but its price for some other districts has been reduced. The principles that can be discerned here are: first, that there is still a tendency for the mass-produced and standardized items to fall in price, especially if they have a low import-content in respect of their raw materials; and secondly, for the vagaries of foreign prices for raw materials to have a delayed action effect on our home prices (in the case of linseed oil this caused a fall, but in the case of lead, a rise).

GROUPS OF MATERIALS

Table II shows an analysis of the index into the four chief groups of materials. In this analysis the base date taken is August, 1945. Building materials' prices have thus risen by nearly one-third (32·4 per cent.) since the end of the war. The group of mainly "imported" materials has, however, risen by no less than 79·3 per cent. The especially rapid increase for this group has been due, in the last quarter, mainly to the rise in the cost of components of paint. The index does *not* yet reflect any increase in the price of timber, since, up to the middle of November, devaluation had not yet had any recorded effect upon the official price. Thus Group I, and so probably the index as a whole, is due for a substantial increase in the future.

Prices in Group II have gone up 50·2 per cent. since the end of the war; they show an increase of 2·8 points over the last quarter. Here the outlook is less certain; the further effects of devaluation may also tend to drive up some of the items in this group, but, on the other hand, any depression in shipbuilding or engineering might sharpen competition in the metal trades and depress these prices—so long, of course, as wage-costs are not increased all round.

Groups III and IV maintain their usual stability, except for a slight rise in the latter.

TABLE I

	Index (August, 1939 = 100)	Number of points change on previous quarter
1945—Qr. 3 ..	160.5	—
,, 4 ..	164.2	+ 3.7
1946—Qr. 1 ..	167.6	+ 3.4
,, 2 ..	170.2	+ 2.5
,, 3 ..	175.8	+ 5.6
,, 4 ..	180.7	+ 4.9
1947—Qr. 1 ..	183.5	+ 2.8
,, 2 ..	197.2	+13.7
,, 3 ..	200.7	+ 3.5
,, 4 ..	206.0	+ 5.3
1948—Qr. 1 ..	209.2	+ 3.2
,, 2 ..	208.3	− 0.9
,, 3 ..	207.9	− 0.4
,, 4 ..	210.7	+ 2.8
1949—Qr. 1 ..	212.4	+ 1.7
,, 2 ..	210.6	− 1.8
,, 3 ..	208.4	− 2.2
,, 4 ..	212.2	+ 3.8

TABLE II

August, 1945 = 100

	Group I Imported	II Metal	III Quarried	IV Primary	Total
1947—Average	166.9	131.5	125.8	102.5	121.9
1948—Qr. 1 ..	176.7	145.9	134.0	107.9	130.4
,, 2 ..	175.6	142.1	133.8	107.9	129.8
,, 3 ..	175.6	142.3	133.8	107.3	129.6
,, 4 ..	184.8	144.4	133.8	107.4	131.4
1949—Qr. 1 ..	190.1	145.9	133.8	107.4	132.5
,, 2 ..	181.1	145.8	133.8	107.7	131.3
,, 3 ..	169.2	147.4	133.8	107.7	129.9
,, 4 ..	179.3	150.2	133.8	108.5	132.4

The index numbers of the same four groups over the base August, 1939, are as follows.

	I	II	III	IV	Total
1949—Qr. 3 ..	327.6	226.5	205.6	159.7	208.4
,, 4 ..	341.8	231.5	205.6	161.1	212.2

FACTORS AFFECTING FUTURE PRICE MOVEMENTS

For how long is the renewed upward movement in prices likely to continue? The three main factors affecting this are evidently likely to be devaluation, wages, and the reduction in the demand for building materials; and all three of these factors are likely, over the next twelve months, to be adverse. All the same, there are good reasons for supposing that any further rise in the index will be fairly gradual. Against the effect of devaluation there may be set the fact that lumber prices in America have already turned downwards. Our own dollar difficulties may hasten a further reduction in the timber prices of the North American continent. The supplies of timber from Finland, Sweden and even Russia —potentially large—may be tapped to better advantage.

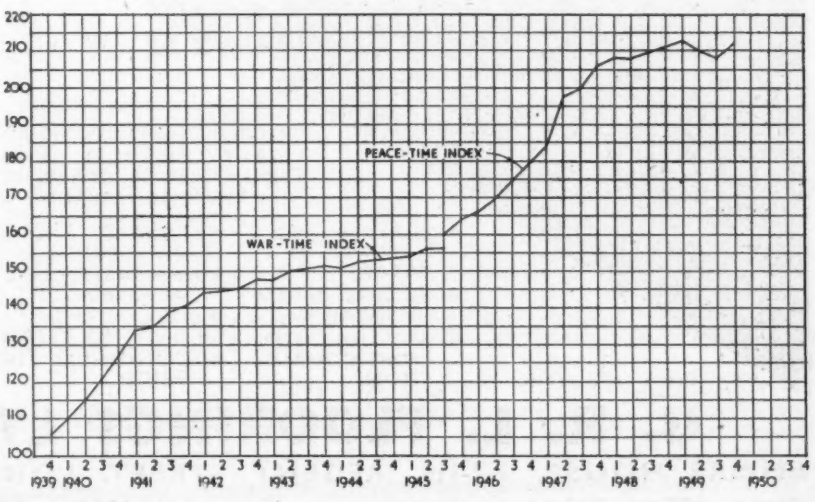
Then, again, against the upward pressure on wages there is the undoubted restraining influence of the TUC and the fact that the productivity of labour is at last beginning to improve.

As for the demand for materials, the main criticism of the latest Government cuts is that they are insufficiently severe; but, from the point of view of avoiding dislocation in the production programmes of the building materials' industries, the gradualness of the cuts is an advantage. The refusal of the Government to be stampeded into a violent change of programme, in this respect at least, suggests that some bitter lessons of recent years have been learnt. The only danger left would be if further big and unavoidably sudden cuts are forced on the country at a later date. This does not seem very likely. After all, if a failure of any degree develops in the exporting industries (shipbuilding, for example, and engineering and textiles), other sources of employment will have to be encouraged; so a "high and stable," but no longer grossly inflated, demand for building materials seems to be a reasonable expectation.

STANDARDIZATION AND PRICES

Nevertheless, there should be no cause for complacency in either the industries producing materials or the building industry itself in face of the economic perils of the next few years. Rising costs are already imposing a strain on the subsidies allowed for new houses; they are also causing a mounting crisis in relation to the rent restriction policy as applied to private landlords, and the rent policy followed by local authorities. In so far as the prices of materials affect these costs, it is of vital importance that they should be stabilized or even reduced. What, then, has happened to the policy of standardization and mass production, from which so much was hoped in 1945? How much of the total production of paint, for example, is sold at the British Standards specifications? How many types of baths and taps are now produced, and to how many types could they be reduced?

Some industries have a good record in these respects, but more publicity is needed for the idea that standardization (and the standard chosen can be high both from an efficiency and a "design" point of view) *can* lead, without reduced wage-rates, to progressively lower costs. As the import prices of raw materials increases, this question becomes increasingly urgent.



Graph showing price index for the last quarter of 1949.

(*Continued from page 629*)

Centre was formed as a limited company because that is the way these things normally have to be done, but any profits which it has made have been devoted to scholarships and other educational purposes. Under the new constitution the Centre ceases to be a limited company and becomes virtually a trust, legally compelled to do what it has always done in the past and devote any profits to educational or other similar purposes. Sir Giles Gilbert Scott becomes president of the new council instead of chairman of the directors, and on the new council there may be no more than seven members representing one particular interest, whether they be architects, quantity surveyors, builders or operatives. In addition there is to be an advisory committee of which civil servants in the relevant Ministries may be members, as well as other people who might be debarred from having any official connection with a profit-making organization.

To carry this out the old Building Centre Limited has to go into liquidation, a sinister word which in this instance means virtually nothing, for this particular Phœnix, cremated yesterday, arises today lacking only the Limited, but with little other noticeable change. Same place, staff and exhibits. Mr. Yerbury may have a new hat, but it remains the same shape and colour. (*The Building Centre NOT Limited, 9, Conduit Street, W.1.*)

Announcements

The Board of Trade has made the Plywood Prices (Amendment) Order, 1949. The order reduces the maximum prices for most descriptions of plywood provided in the Plywood Prices Order, 1949; the main exceptions are Douglas Fir, plywoods of Nigerian manufacture, and unsorted plywood offcuts, the prices of which are unchanged. The order provides maximum prices for various kinds of plywood which were not covered by the principal order; these new varieties are marked with an asterisk in the order. The permitted additions for carriage expenses incurred by the seller before sale are now the same for all distances of 60 miles and less, special provision no longer being made for distances of 20 miles and less. Copies of the Order (SI 1949 No. 2013) are obtainable, price 6d., from the sales offices of HMSO.

Mr. John Lawrie Lumsden, A.R.I.B.A., A.R.I.A.S., of Edinburgh, has been appointed to the Colonial Service as an architect in Mauritius.

Messrs. Gent & Co., Ltd., electrical and horological engineers, Faraday Works, Leicester, have equipped their new showroom at 47, Victoria Street, London, with working models demonstrating the applications of their various recording, timing and signalling systems. Technical literature of practical usefulness to architects is also available detailing the most modern types of installation available for hospitals, schools and factories.

Mr. Maxwell Ayrton, F.R.I.B.A., of 9, Church Row, Hampstead, N.W.3, has taken into partnership as from January 1, 1950, Mr. J. A. Lynch, A.I.A.A. & S., and Mr. Courtenay Theobald, F.R.I.B.A. The partnership will be carried on under the name of Maxwell Ayrton and Partners.

Mr. Cecil Lee, architect, Lloyds Bank Chambers, Thirsk, Yorkshire, would be pleased to receive trade literature, information sheets, catalogues, etc.

The form printed below is to assist readers requiring up-to-date information on building products and services. Complete and post it to The Architects' Journal 9, 11 and 13, Queen Anne's Gate, S.W.1, and the advertisers listed will be asked to supply information direct.

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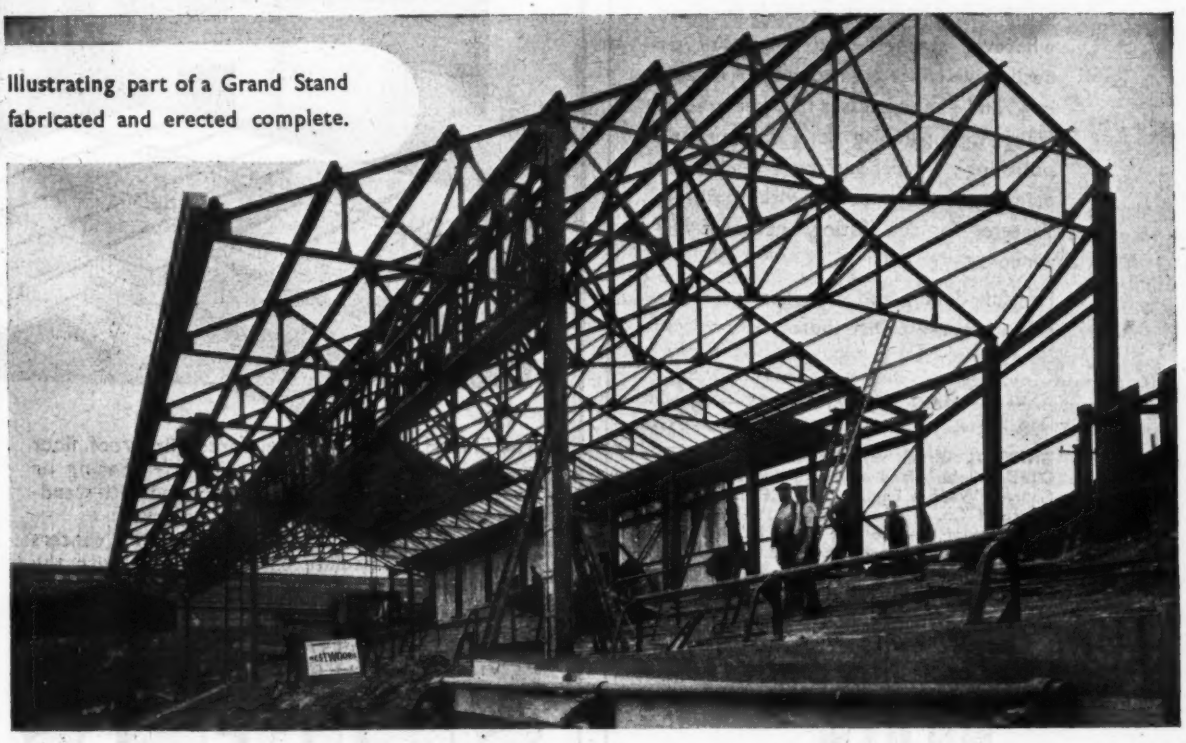
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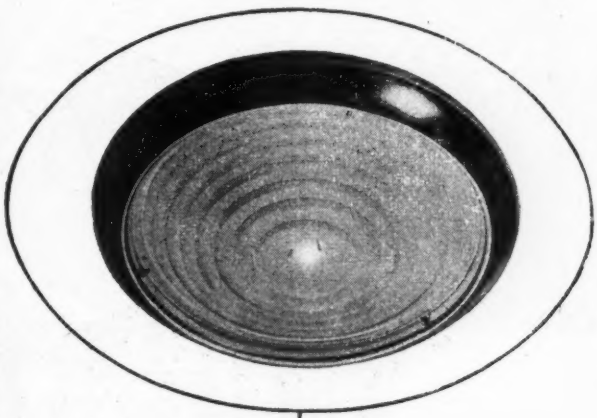
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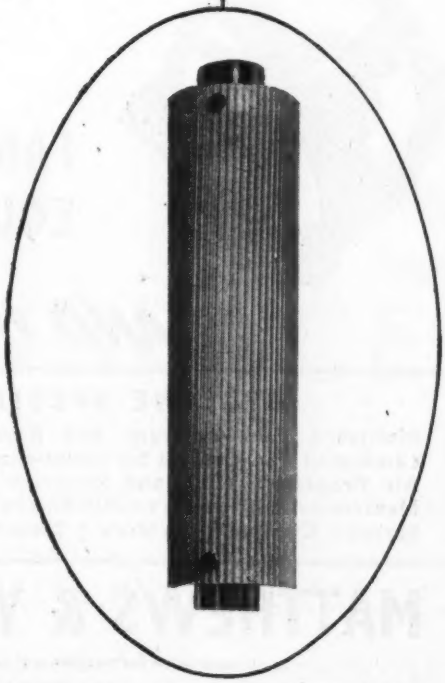
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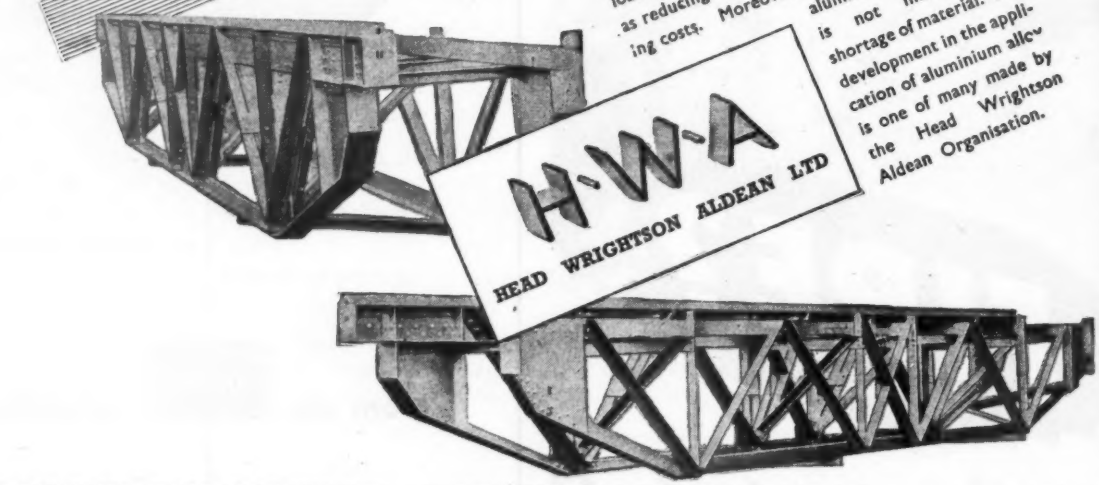
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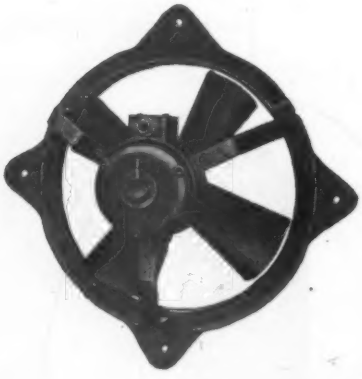
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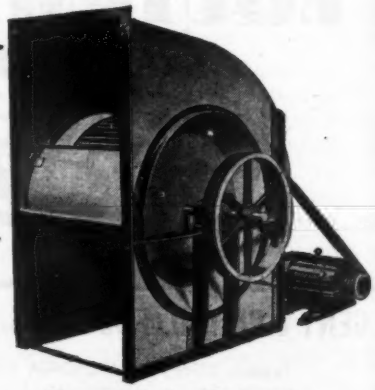
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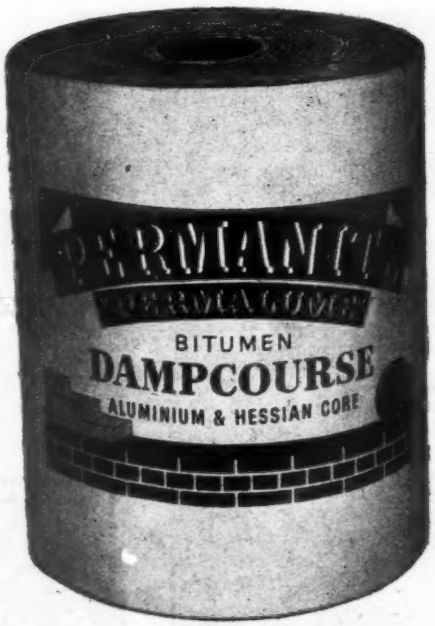
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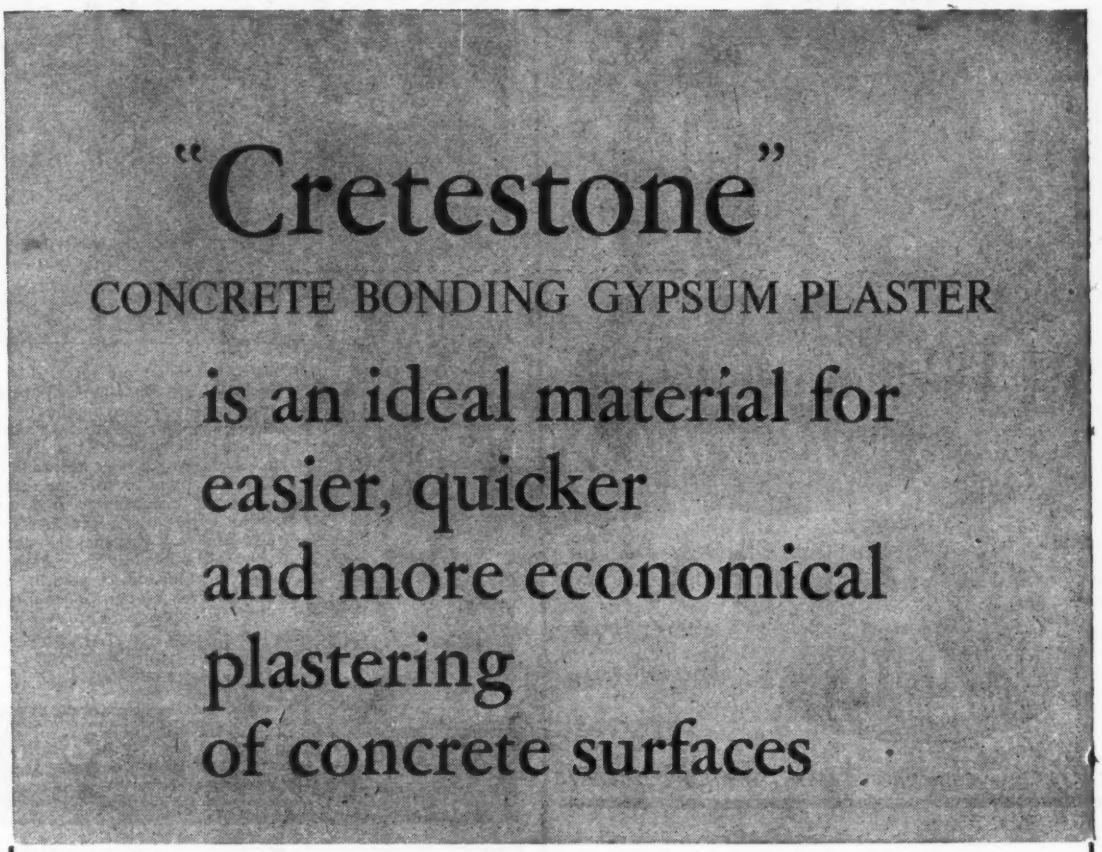
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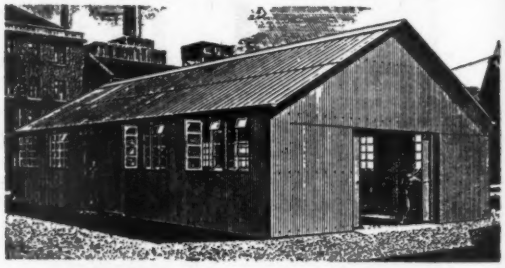
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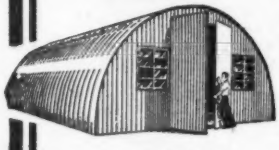
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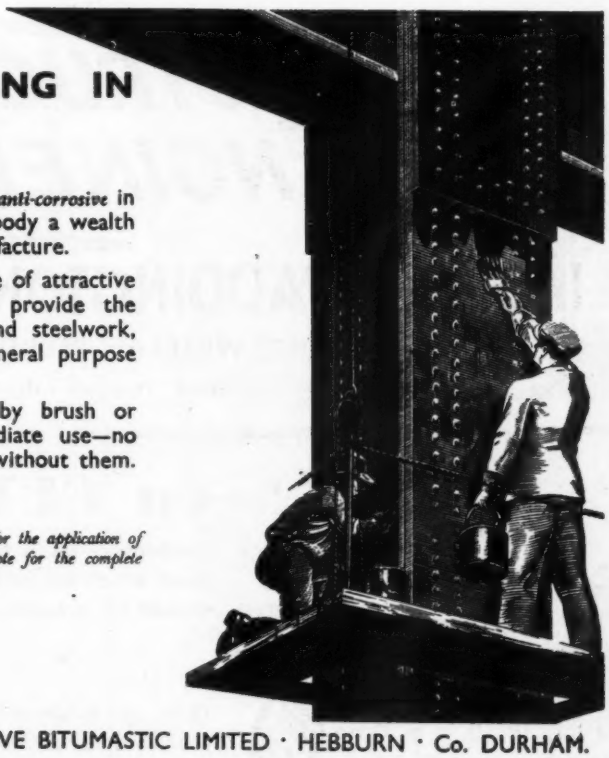
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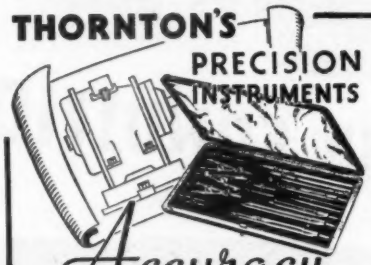


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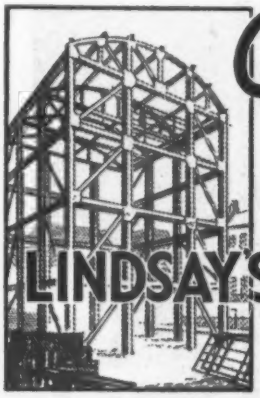


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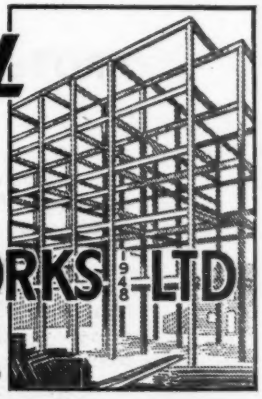
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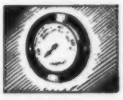
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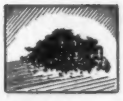
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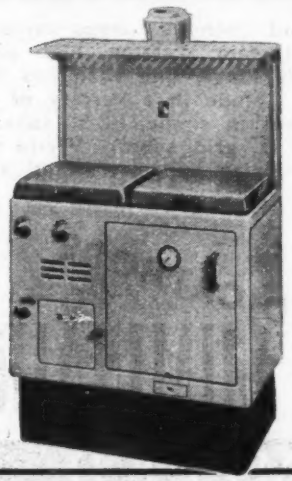
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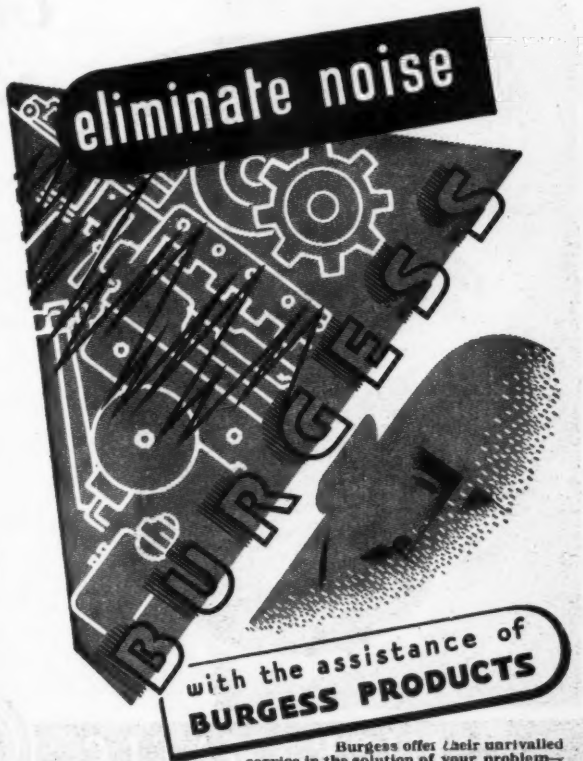
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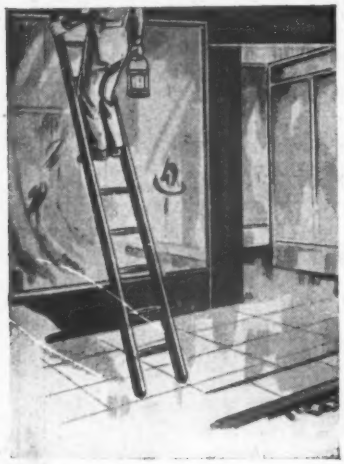
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CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

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THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. ADDRESS: EMPLOYMENT REGISTER, WREN PARK, WHYTELEAFE. Tel.: Uplands 0935. 991

LONDON COUNTY COUNCIL.

Applications are invited for unestablished positions of (i) ARCHITECT, Grade III (salaries up to £700 a year) and (ii) ARCHITECTURAL ASSISTANTS (salaries up to £580 a year), in the Housing and Valuation Department. Commencing salaries in either grade will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to undertake the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats), and will be employed in the Housing Architect's Division. Preference will be given to candidates holding a recognized professional qualification.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required, and quote Ref. G.R.3). Canvassing disqualifies. (2269) 1046

MINISTRY OF WORKS.

There are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS, with recognized training and fair experience. Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges, and Housing. Similar vacancies also exist for ASSISTANTS, with specialized knowledge and experience in stonemasonry, particularly in detailing and jointing of ashlar and carved stonework.

Salary: Architectural Assistants, £300-£525 per annum; Leading Architectural Assistants, £500-£625, plus overtime. Starting pay will be assessed according to age, qualifications and experience. These rates are for London; a deduction is made in the Provinces.

Although these are not established posts, some of them have long-term possibilities, and competitions are held periodically to fill established vacancies.

Apply in writing, stating age, nationality, full details of experience, and locality preferred, to Chief Architect, W.C.10/T, Ministry of Works, Abell House, London, S.W.1. 2065

PEMBROKESHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the Established Posts of ASSISTANT ARCHITECTS, Grade V to Grade VIII, and ARCHITECTURAL ASSISTANTS, Grade III and Grade IV, A.P. and T. Division.

Commencing salary in each Grade will be determined according to qualifications and experience, and appointment will be subject to the Local Government Superannuation Act. Previous Local Government experience not necessary, but the successful candidates will be required to undertake work in connection with Schools, Police Housing and County Buildings.

Forms of Application can be obtained from the County Architect, County Offices, Haverfordwest, and should be completed and returned, together with copies of two recent testimonials, or the names of two references, not later than Tuesday, 13th December, 1949, to:—

WALTER BARRETT,
County Architect.

County Architect's Dept., Haverfordwest.
15th November, 1949. 2721

DEVON COUNTY COUNCIL.

Applications are invited for the undermentioned appointments on the established staff:—

ASSISTANT ARCHITECTS, A.P.T., VI (salary £595-£660); A.P.T., V (salary £520-£570); A.P.T., IV (salary £480-£525); A.P.T., III (salary £450-£495).

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, and terminable by one month's notice on either side. The successful candidates will be required to pass a medical examination.

Applications, stating age, qualifications and experience, accompanied by not more than three recent testimonials, should be sent to the County Architect, 97, Heavitree Road, Exeter, not later than Monday, the 12th December, 1949.

Canvassing, directly or indirectly, will disqualify.

H. A. DAVIS,
Clerk of the County Council.

The Castle, Exeter.
16th November, 1949. 2732

COUNTY COUNCIL OF INVERNESS.
DEPUTY COUNTY PLANNING OFFICER.

Applications are invited for the appointment of Deputy County Planning Officer. Salary £750-£900, with placing on scale according to experience and qualifications. Applicants must be Corporate Members of the Town Planning Institute and should also hold a recognised qualification in Architecture. A wide experience in the preparation of planning schemes for rural and coastal areas is essential. Applicants must be good administrators, have a sound knowledge of current planning practice, and be capable of assuming responsibility for the control of planning staff.

The appointment will be subject to the Local Government Superannuation (Scotland) Act, 1937.

Applications, stating age, qualifications and experience, with copies of three recent testimonials, should be lodged with the undersigned within 14 days from the publication of this advertisement.

R. WALLACE,
County Clerk.

County Buildings, Inverness. 2779

THE CO-OPERATIVE WHOLESALE SOCIETY, LTD.,

invite applications for the following appointments on the staff of the Manchester Architects' Department:—

THREE ASSISTANT ARCHITECTS. Salary £510-£625 per annum. Applicants are required to have a sound knowledge of building construction and be able to produce working drawings and details from sketch plans. Experience in design and planning of modern industrial buildings, or shopping emporiums and retail shops will be considered an advantage.

The above appointments are permanent and offer prospects of up-grading to competent Assistants. Successful candidates will be required to undergo a medical examination for entry into compulsory superannuation scheme.

Applications, stating age, experience, and qualifications, to be addressed to the Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester. 2658

CORPORATION OF GLASGOW.
HOUSING DEPARTMENT.
ASSISTANT ARCHITECTS:

Grade II. Salary scales: A.P.T., VI, £595-£660; A.P.T., V, £520-£570; A.P.T., III, £450-£495; A.P.T., II, £420-£465.

Applications are invited for appointments to the Architectural Staff of the Department, at salaries in accordance with the above scales. Placing on these scales will be according to age and experience.

Applicants should have passed the Final Examination of the Royal Institute of British Architects or should hold other equivalent qualifications.

The appointments will be to the Permanent Establishment of the Department, and are subject to the provisions of the Corporation's Superannuation Scheme. Successful applicants will require to pass a medical examination.

The appointments are terminable on either side by one month's notice in writing.

Applications, stating age, particulars of training, experience and qualifications, should be addressed to the undersigned and should be received within 14 days of the publication of this advertisement.

A. G. JURY,
Director of Housing.

Housing Department, 20, Trongate, Glasgow, C.1. 2701

CAMBRIDGESHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of PLANNING ASSISTANT, A.P.T., Grade IV, salary £480-£525 per annum. Candidates will initially be engaged in the Survey and Research Section of the County Planning Department, and must have had experience in the study of Government Statistics relating to Planning and Census Returns and possess a broad working knowledge of Planning Techniques.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, the Council's Conditions of Service, and a medical examination.

Applications, stating age, past and present appointments (with dates), qualifications, present salary, and the names of two referees, should be sent to the undersigned not later than the 12th December, 1949.

CHARLES PHYTHIAN,
Clerk of the County Council.

Shire Hall, Castle Hill, Cambridge. 2734

KENT COUNTY COUNCIL.

Applications are invited for the appointment on the permanent staff of the Buildings Department of ASSISTANT ARCHITECTS, at a salary in Grade A.P.T., V(a) (£550-£610).

Applicants must be Members of the Royal Institute of British Architects and have had experience in the preparation of sketch schemes and working drawings for modern buildings. Previous experience with a local authority is not essential.

The posts are superannuable, and the successful candidates will be required to pass a medical examination.

Applications, on forms obtainable from the County Architect, Springfield, Maidstone, must be delivered to him not later than 14 days after the appearance of this advertisement.

W. L. PLATTS,
Clerk of the County Council.

County Hall, Maidstone.
17th November, 1949. 2756

CANTERBURY EDUCATION COMMITTEE.
COLLEGE OF ART.
SCHOOL OF ARCHITECTURE.

Required as soon as possible two Full-time STUDIO MASTERS, for work in connection with the Finals Course. The College is approved by the R.I.B.A. as a Listed School. Candidates must be Associates or Fellows of the R.I.B.A., preferably school trained and with some professional experience in Architecture. Previous teaching experience is desirable, but not essential. Salary scale: £300, plus £15 to £555, plus a graduate allowance of £30. Up to ten increments may be allowed for suitable professional experience.

Applications, giving full particulars of training, qualifications and experience, should be sent to the Principal as soon as possible.

N. POLMEAR, M.A.,
Chief Education Officer.

78, London Road, Canterbury. 2729

BOROUGH OF DROITWICH.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant in the Borough Surveyor's Department of the Council.

The salary will be in accordance with Grade III of the A.P. and T. Division of the National Scale of Salaries (£450-£495 per annum).

The appointment will be subject to one month's notice on either side and to the provision of the Local Government Superannuation Act, 1937, and the passing of a satisfactory medical examination.

Applications, stating age, training, qualifications and experience, together with copies of two recent testimonials, are to be delivered to the undersigned not later than mid-day on Friday, 2nd December, 1949.

S. G. FOSTER,
Town Clerk.

Town Hall, Droitwich.
November, 1949. 2704

COUNTY BOROUGH OF HUDDERSFIELD.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

(1) SENIOR TOWN PLANNING ASSISTANT. Grade VI-VII, £595-£710 (salary to commence in Grade VI, appropriate to experience). Candidates must have had considerable experience in all aspects of statutory planning, development control, and planning procedure in general. Candidates should be Associate Members of the Town Planning Institute, and, in addition, should have either an Engineering, Surveying or Architectural qualification.

(2) TOWN PLANNING ASSISTANT. Grade II, £420-£465. Candidates must have had experience in Survey Work and Development Control in a Planning Office.

Housing accommodation will be made available, if necessary, and candidates are requested to state in their application if such accommodation is required.

The appointments will be subject to one month's notice on either side, expiring at the end of a calendar month, to the provisions of the Local Government Superannuation Act, 1937, and the successful applicants will be required to pass a medical examination.

Applications, suitably endorsed, giving age, qualifications, past and present appointments, and full details of experience, together with the names of three referees, must reach the Borough Architect, High Street Buildings, Huddersfield, not later than Monday, the 12th December, 1949.

Canvassing members of the Council, either directly or indirectly, will be a disqualification.

HARRY BANN,
Town Clerk.

Town Hall, Huddersfield.
November, 1949. 2752

SOUTH-EASTERN REGIONAL HOSPITAL BOARD (SCOTLAND).
CHIEF ARCHITECT'S DEPARTMENT.

Applications are invited for the following permanent appointment in the Chief Architect's Department, headquarters in Edinburgh.

ASSISTANT CHIEF ARCHITECT. Salary scale £750×£25—£1,000 per annum.

Applicants should be Members of the R.I.B.A. by examination or hold an equivalent qualification, and have had wide experience of the planning, design and construction of large building projects, preferably including hospital buildings.

The scope of the work will include the planning and design of new hospitals, etc., and applicants should possess a contemporary outlook on design.

The selected applicant will be required to deputise for the Chief Architect as and when required, and applicants should have had wide administrative experience.

The post is subject to the provisions of the National Health Service (Scotland) (Superannuation) Regulations, 1948, and the successful candidate will be required to pass a medical examination.

Applications, giving full details of age, education, technical training, qualifications, experience, present and previous appointments and salary, accompanied by copies of two recent testimonials and the names and addresses of two referees to whom reference may be made, should be addressed to R. Forbes Hutchison, Chief Architect, 6, Cambridge Street, Edinburgh, 1, on or before Tuesday, 6th December, 1949.

18th November, 1949.
RFH/B. 2753

COUNTY BOROUGH OF WEST HARTLEPOOL.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of an ASSISTANT ARCHITECT, at a salary in accordance with Grade A.P.T., I to IV (according to qualifications and experience of applicant), of the National Scales of Salaries.

The appointment is subject to the Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services (with the exception of paragraph 39) and the provisions of the Local Government Superannuation Act, 1937. The successful applicant will be required to pass a medical examination.

Applications, stating age, qualifications, previous and present appointments, details of experience, together with copies of recent testimonials, and stating clearly the grade for which application is made, are to be sent to S. M. Richmond, F.R.I.B.A., A.M.T.P.I., Borough Architect, Municipal Buildings, West Hartlepool, not later than Wednesday, 14th December, 1949.

ERIC J. WAGGOTT,
Town Clerk.

Town Clerk's Department, Municipal Buildings, West Hartlepool.
23rd November, 1949. 2788

BOROUGH OF WIMBLEDON.
ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of a General Architectural Assistant on Grade A.P.T., IV, on the established staff of the Borough Engineer and Surveyor's Department.

Commencing salary is £480 per annum, rising by three annual increments of £15 to a maximum of £525. London weighting according to age is paid in addition to the salary. Applicants must have had experience in Municipal architectural and housing work, and must have passed Intermediate Examination of R.I.B.A.

The appointment is in accordance with the National Scheme of Conditions of Service, and is subject to the provisions of the Local Government Superannuation Acts, also to satisfactory medical examination.

Applications, endorsed "Architectural Assistant," stating age, qualifications, past and present experience in detail, all former local government service, present and previous appointments, length of notice required to terminate present appointment, and the names and addresses of three persons as referees, must be forwarded to the Borough Engineer and Surveyor, Town Hall, Wimbledon, S.W.19, by 19th December, 1949.

Candidates must disclose in writing to the undersigned whether to their knowledge they are related to any member or senior officer of the Council.

EDWIN M. NEAVE,
Town Clerk.

Town Hall, Wimbledon, S.W.19. 2787

BOROUGH OF BILSTON.

Applications are invited for the post of ARCHITECTURAL ASSISTANT in the Borough Architect's Department. Salary at the rate of Grade A.P.T., V, £520-£570 per annum.

The appointment is subject to the Local Government Superannuation Act, 1937, and the National Scheme of Conditions of Service, and determinable by one month's notice on either side.

Applications, stating age, full details of qualifications and experience, and accompanied by copies of not more than three recent testimonials, to be sent to the Borough Architect, 20, Wellington Road, Bilston, Staffs., not later than Tuesday, 20th December, 1949.

A. M. WILLIAMS,
Town Clerk.

Town Hall, Bilston, Staffs.
22nd November, 1949. 2784

THE NORTH-WESTERN ELECTRICITY BOARD.
ARCHITECTURAL ASSISTANT.

Applications are invited for the position of Architectural Assistant in the Engineering Department at the Area Board Headquarters, Cheetwood Road, Manchester, 8.

Applicants should have received a recognised architectural training and have had experience in the design and construction of industrial and commercial type buildings.

Special consideration will be given to those applicants having, in addition, experience in the design of electricity sub-stations and showrooms.

The salary, which is provisional and subject to negotiation by the appropriate bodies, will be within the scale £650 to £750.

Applications, stating age, full details of experience, present position and salary, professional and technical qualifications, should be received by the Establishment Officer, The North-Western Electricity Board, Cheetwood Road, Manchester, 8, not later than Monday, 19th December, 1949. 2782

BOROUGH OF BARNES.
TEMPORARY ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment. Applicants should be good draughtsmen and be capable of preparing plans and details for general architectural works. The salary attached to the appointment is £440×£15—£485 per annum.

Applications, giving the names of three persons to whom reference can be made, must be sent to the undersigned not later than 9th December, 1949.

W. R. SHEPHERD, A.M.I.C.E., A.R.I.C.S.,
Borough Engineer and Surveyor.

Municipal Offices, Sheen Lane, S.W.14.
23rd November, 1949. 2795

UNIVERSITY OF SYDNEY.

Applications are invited for the post of SENIOR LECTURER in the Department of Town and Country Planning. Commencing salary will be fixed according to qualifications and experience within the range £750 (Australian) to £1,000 (Australian) per annum, plus cost-of-living adjustments, with annual increments of £50, and is subject to deductions under the New South Wales Superannuation Act. The appointment will be for a period of five years, subject to extension under such conditions as may be approved by the University of Sydney, and the successful applicant will be required to take up duties as early as practicable in 1950. Preference will be given to candidates with practical experience of planning work who have a special knowledge of regional planning. Further information may be obtained on application to the Secretary, Association of Universities of the British Commonwealth, 5, Gordon Square, London, W.C.1. Applications supported by testimonials and giving the names of three referees should be forwarded to reach the undersigned not later than 1st January, 1950, by airmail.

G. DALE,
Registrar.

University of Sydney, New South Wales, Australia. 2755

WEST SUSSEX COUNTY COUNCIL.

Applications are invited from suitably qualified candidates for the post of ARCHITECTURAL ASSISTANT at the County School of Art and Crafts, Worthing. The person appointed will be required to assist with the teaching of Architecture up to Intermediate R.I.B.A. standard. Salary in accordance with Burnham Technical Scale for Assistant Teachers. Forms of application may be obtained from the Director of Education, County Hall, Chichester, on receipt of a stamped (2½d.), addressed, foolscap envelope, and completed forms should be returned by not later than 14 days from the appearance of this advertisement.

T. C. HAYWARD,
Clerk of the County Council.

2730

STAFFORDSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.
APPOINTMENT OF AREA PLANNING OFFICER.

Applications are invited for the appointment on the established staff of the County Planning Department of an Area Planning Officer, in the Central Area Office of the department at Stafford.

The person appointed will be required to assist in the preparation of the Development Plan for the County, with particular reference to the Central Area, and will be responsible for advising on control of development in that area.

Applicants must be Corporate Members of the Town Planning Institute and should hold, in addition, a recognised qualification in architecture, engineering or surveying. They should have an up-to-date knowledge of Town and Country Planning practice and be experienced in administration and the handling of staff. They should also have had considerable experience with a Local Planning Authority.

The salary will be in accordance with A.P.T., Grade X, of the National Scales of Salary, *i.e.*, £850 to £1,000, by increments of £50 per annum. The commencing salary will be fixed within this grade in accordance with the qualifications and experience of the applicant appointed.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937; the National Joint Council's Scheme of Conditions of Service as adopted by the County Council; the passing of a medical examination; and to three months' notice on either side.

Canvassing, directly or indirectly, will be deemed a disqualification, and relationship to any member or senior officer of the Council must be disclosed.

Applications should give details of age, education and training, qualifications, present and previous appointments and experience, and should include copies of two recent testimonials and the names of two other persons to whom reference can be made. They should be sent to D. W. Riley, County Planning Officer, County Planning Department, 41a, Eastgate Street, Stafford, not later than 15th December, 1949.

T. H. EVANS,
Clerk of the County Council.

County Buildings, Stafford.
21st November, 1949. 2781

STAFFORDSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
APPOINTMENT OF ARCHITECTURAL STAFF.

Applications are invited for the above on A.P.T. salary Grades I-VIII, ranging from £390-£760 per annum, according to experience and qualifications.

The appointments will be subject to the Scheme of Conditions of Service of the National Joint Council and to the provisions of the Local Government Superannuation Act, 1937.

Applications, giving full details of experience and qualifications, age, etc., together with three recent testimonials, should be delivered to the County Architect, Martin Street, Stafford, not later than Friday, the 9th December, 1949.

Applicants must disclose whether or not they are related to any member or senior officer of the Council. Canvassing will be a disqualification.

T. H. EVANS,
Clerk of the County Council.

County Buildings, Stafford.
22nd November, 1949. 2780

THE UNIVERSITY OF MANCHESTER.

Applications are invited for the following posts:—

LECTURER AND ASSISTANT LECTURER IN TOWN AND COUNTRY PLANNING.

ASSISTANT LECTURER IN ARCHITECTURE.

Salary scale of Lecturer £500 to £1,100 per annum. Initial salary according to qualifications and experience. Salary scale of Assistant Lecturer £450 to £500 per annum. Membership of the F.S.S.U. and Children's Allowance Scheme. Applications should be sent not later than 30th December, 1949, to the Registrar, the University, Manchester, 13, from whom further particulars and forms of application may be obtained. 2764

ANGLESEY COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following permanent appointments in the County Architect's Department:—

(*a*) ONE SENIOR ASSISTANT ARCHITECT. Salary Grade VII, commencing at £635 per annum and rising to £710 per annum. Applicants should be Registered Architects and Members of the Royal Institute of British Architects, with considerable experience in the design of Education Buildings, supervision of technical staff, etc.

(*b*) ONE ASSISTANT ARCHITECT. Salary Grade IV, commencing at £480 per annum and rising to £525 per annum. Applicants should have had good experience in the preparation of working drawings, and preference will be given to applicants who have passed the Intermediate Examination of the R.I.B.A.

(*c*) ONE ARCHITECTURAL ASSISTANT. Salary Grade III, commencing at £450 per annum and rising to £495 per annum. Applicants should have had good architectural training and be good draughtsmen.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, and will be subject to three months' notice on either side for the Grade VII appointment and one month's notice on either side for the Grades III and IV appointments. Candidates called for interview will be required to undergo a medical examination by the County Medical Officer.

Further particulars regarding the appointments may be obtained from the County Architect, N. Sq. Johnson, A.R.I.B.A., A.M.T.P.I., County Architect's Dept., Shire Hall, Llangefni.

Applications, stating age, training, experience, qualifications, past and present appointments, names of two referees, and accompanied by a copy of one recent testimonial, are to be sent so as to reach the undersigned not later than Monday, 12th December, 1949.

WILLIAM JONES,
Clerk of the County Council.

Shire Hall, Llangefni, Anglesey.
21st November, 1949. 2777

DERBYSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the undermentioned appointments on the permanent staff.

Conditions of service and salaries are in accordance with the National Joint Council Scheme for Local Authorities, as adopted by the County Council.

ARCHITECTURAL ASSISTANTS:

(*a*) A.P.T., Grade III. Salary £450×£15 to £495 per annum.

(*b*) A.P.T., Grade II. Salary £420×£15 to £465 per annum.

(*c*) A.P.T., Grade I. Salary £340×£15 to £435 per annum.

Applicants for (*a*), (*b*) and (*c*) to have had a good architectural experience and to be first-class draughtsmen.

JUNIOR ARCHITECTURAL ASSISTANTS:

(*d*) Miscellaneous Division (Grade II). Salary £375×£15 to £420 per annum.

(*e*) Miscellaneous Division (Grade I). Salary £315×£15 to £360 per annum.

(*f*) General Division. Salary £135 per annum at 16 years of age, with annual increments to £385 per annum at the age of 32.

Applicants for (*d*) and (*e*) to have experience in an architect's office and to be first-class draughtsmen.

Applicants for (*f*) must possess some ability in draughtsmanship.

The appointments will be terminable by one month's notice on either side, and subject to the provisions of the Local Government Superannuation Acts, and the successful candidates will be required to pass a medical examination.

Canvassing members of the Council, directly or indirectly, will be a disqualification for appointment.

The County Council is not in a position to assist successful applicants with housing accommodation.

Applications to be made on a form to be obtained from the undersigned, to whom it must be returned, accompanied by copies of three recent testimonials, not later than 9th December, 1949.

Envelopes and applications must be endorsed stating clearly the vacancy for which the application is made.

(By permission of the Ministry of Labour and National Service under the Control of Engagement Order, 1947.)

F. HAMER CROSSLEY, Dipl.Arch.(L'pool), A.R.I.B.A.,
County Architect.

St. Mary's Gate, Derby.
23rd November, 1949. 2774

COUNTY BOROUGH OF GATESHEAD.
CLERK OF WORKS.

Applications are invited for the appointment of Clerk of Works in the Chief Architect's Department to supervise the erection of permanent houses.

Applicants must have a sound and practical knowledge of the building trades and be experienced in the supervision and erection of all types of houses and blocks of flats, including setting out, levelling, measuring up and keeping records.

The salary will be in accordance with A.P.T., Grade IV, commencing £480-£525 per annum.

The appointment will be subject to the Local Government Superannuation Act, 1937, and to one month's notice on either side. The successful candidate will be required to pass a medical examination.

Applications to be made on forms obtainable from the Chief Architect should be returned, together with copies of three recent testimonials, to H. J. Cook, A.R.I.B.A., M.I.Struct.E., Chief Architect, Municipal Buildings, Swinburne Street, Gateshead, 8, not later than Monday, the 19th December, 1949.

J. W. PORTER,
Town Clerk.

Town Hall, Gateshead, 8.
24th November, 1949. 2794

NATIONAL HEALTH SERVICE.

The South-East Metropolitan Regional Hospital Board invite applications for the following appointment in the Regional Architect's Department. ARCHITECTURAL ASSISTANT, A.P.T., Grade V. Salary £520-£570 per annum, plus London weighting. Candidates should be capable draughtsmen, preferably with knowledge and experience of hospital work and up to Inter. R.I.B.A. standard. The post is superannuable under the National Health Service (Superannuation) Regulations, 1947-9.

Applications, which should state age of applicant, present salary, and a brief statement of qualifications and experience, together with the names and addresses of two referees, should be addressed to the Secretary of the Board, 11, Portland Place, W.1, not later than 10th December, 1949. 2790

Amended Advertisement.

BUCKS COUNTY COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant, on the staff of the County Land Agent, in Grade A.P.T., IV, of the National Scales of Salaries (£520-£570 p.a.), to assist the Agricultural Architect with work on the Council's Smallholdings and Green Belt Estate. The appointment is superannuable, and subject to medical examination.

Applicants should have received a thorough training in General Architectural work, and have had good experience in design and construction, and also in the preparation of working drawings and site surveys. Preference will be given to Registered Architects. A weekly allowance of 25s. and bi-monthly return fare home may be paid for one year to married officers of the Council unable to find housing accommodation.

Applications, stating age, qualifications and experience, and accompanied by copies of two recent testimonials, must be delivered to the County Land Agent, County Offices, Aylesbury, by 16th December, 1949. 2792

SALOP COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments to Established posts in the Department:—

(1) SENIOR ASSISTANT ARCHITECT, A.P.T., Grades V-Va. Salary £520 to £610 per annum.
(2) ASSISTANT ARCHITECT. A.P.T., Grades III-IV. Salary £450 to £525 per annum.
(3) ASSISTANT ARCHITECT. A.P.T., Grades II-III. Salary £420 to £495 per annum.

The appointments will be subject to one month's notice in writing on either side; to the terms of the National Joint Council's Scheme of Conditions of Service, and to the provisions of the Local Government Superannuation Act, 1937. The successful applicants will be required to pass a medical examination.

Application forms may be obtained from the County Architect, A. G. Chant, F.R.I.B.A., Column House, London Road, Shrewsbury, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than Tuesday, 20th December, 1949.

G. C. GODBER,
Clerk of the Council.

Shrewsbury.
November, 1949. 2759

URBAN DISTRICT COUNCIL OF BILLERICAY.
ARCHITECTURAL ASSISTANT.

Qualifications: Intermediate R.I.B.A. or its equivalent. Salary A.P.T. Division, Grade II, III or IV (£420×£15 to £465 per annum), £450×£15 to £495 per annum, or £480×£15 to £525 per annum), according to experience.

Consideration will be given to offering housing accommodation to the successful candidate.

Applications, on forms to be obtained from the Surveyor, Council Offices, Billericay, should be forwarded to the undersigned not later than Saturday, the 10th December, 1949.

A. HATT,
Clerk of the Council.

Council Offices, Billericay, Essex. 2761

HIS MAJESTY'S COLONIAL SERVICE.
TOWN PLANNING OFFICERS are required by the Government of Nigeria. The selected officers will be appointed either on probation for permanent and pensionable employment at a salary within the incremental scale £660 to £1,300 (consolidated) or on contract for one tour in the first instance at a flat-rate salary within the scale £800 to £1,300 per annum (consolidated), point of entry in each case depending on age, experience and professional qualifications. An outfit allowance of £60 is paid on first appointment. Partly furnished Government quarters are provided, if available, at a rental of £60, £75 or £90 per annum, according to salary, and income tax is payable at low West African rates only. Candidates must be Associate Members of the Town Planning Institute, and should have had experience in the Town Planning branch of a Municipal or other local authority in the design and execution of Town Planning Schemes. Preference will be shown to candidates possessing, in addition, professional engineering or architectural qualifications. Tours of duty last from 18-24 months. Terms of service include free first-class passages for the officer and, if married, for his wife, once each way each tour, free medical attention, and home leave on full pay at the rate of seven days per month of resident service.

Applicants should write at once to the Director of Recruitment (Colonial Service), Sanctuary Buildings, Great Smith Street, London, S.W.1, stating age, professional qualifications and experience, and quoting reference No. 27281/7. 2770

COUNTY BOROUGH OF ROCHDALE.
BOROUGH SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment of a SENIOR ASSISTANT ARCHITECT (A.P.T., Grade Va) in the Borough Surveyor's Department, at a salary in accordance with the National Joint Council's Scales, *viz.*, £550, rising to £610 per annum.

Applicants must be Associates of the R.I.B.A. and should have a thorough knowledge of architectural work, with practical experience in the design of public buildings of all types.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, and to the selected candidate passing a medical examination. Canvassing is prohibited, and candidates must disclose whether to their knowledge they are related to any member or senior officer of the Council.

Applications, stating age, qualifications and full particulars of experience, together with the names of two persons to whom reference may be made, and endorsed "Senior Assistant Architect," must be delivered to the Borough Surveyor, Town Hall, Rochdale, not later than 9 a.m. on Wednesday, the 21st December, 1949.

K. B. MOORE.
Town Clerk.

2766

HUYTON WITH ROBY URBAN DISTRICT COUNCIL.
APPOINTMENT OF ASSISTANT BUILDING INSPECTOR.

Applications are invited for the appointment of Assistant Building Inspector, at a salary in accordance with Grade II of the A.P.T. Division of the National Scales, i.e., £420×£15—£465. A car allowance will be paid and the Council will provide housing accommodation, if necessary, for which the successful candidate will pay rent and rates.

The position is established and will be subject to the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applicants should hold a Building Inspectors' Examination Certificate of the Institution of Municipal Engineers or of the R.I.B.A.

Applications, stating age, experience, qualifications, and present and past appointments, with the names and addresses of two persons to whom reference may be made, should reach the undersigned not later than the 16th December, 1949.

Canvassing disqualifies.

H. E. H. LAWTON,
Clerk of the Council.

Council Offices, Huyton.
21st November, 1949. 2778

COUNTY OF LEICESTER.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following established posts in the County Architect's Department:—

(*a*) SENIOR ASSISTANT ARCHITECTS. A.P.T., Grade VI/VII. Salary £595-£710. Commencing point will be fixed according to experience.

(*b*) ASSISTANT ARCHITECTS. A.P.T., Grade V. Salary £520-£570.

Preference will be given to candidates who are Associate Members of the R.I.B.A. and have had good experience in the design and construction of modern buildings.

The appointments will be subject to the National Scheme of Conditions of Service and to the provisions of the Local Government Superannuation Act, 1937, and to a satisfactory medical examination.

Applications must be made on the forms to be obtained from the County Architect, T. A. Collins, A.R.I.B.A., 123, London Road, Leicester, to whom they should be returned, accompanied by copies of three recent testimonials, not later than Monday, 12th December, 1949.

JOHN A. CHATTERTON,
Clerk of the County Council.

Grey Friars, Leicester. 2762

FLINTSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of PLANNING ASSISTANT (Grade A.P.T., II). Salary £420 per annum, rising to £465 per annum.

Applicants should have had experience in the work of the Planning Office of a Local Planning Authority.

The possession of a motor-car would be an advantage, for which appropriate mileage allowances will be paid in accordance with the National Joint Council's Scales.

Forms of application obtainable from the undersigned.

Closing date 10th December, 1949.

W. HUGH JONES,
Clerk of the County Council.

County Buildings, Mold. 2760

BOROUGH OF WILLESDEN.
APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

The Council invite applications for the appointment of ONE ARCHITECTURAL ASSISTANT on the Permanent Staff and one on the Temporary Staff of the Borough Engineer and Surveyor's Department.

The salary attaching to the post will be Administrative, Professional and Technical Grade, V, of the National Whitley Council's Scheme for the London area, namely £520 per annum, rising by two annual increments of £15 each and one of £20 to £570 per annum, plus London weighting, according to age.

Candidates must be Associates of the Royal Institute of British Architects or hold an equivalent qualification, and preferably have general knowledge and experience of architectural work in the service of a local authority.

The permanent appointment will be terminable by one month's notice on either side, is subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, giving age, experience, etc., accompanied by copies of not more than three testimonials, should be addressed to the undersigned, endorsed "Architectural Assistant," not later than 10 a.m. on 19th December, 1949.

It will be necessary for the successful candidate to provide his own housing accommodation as the Council is not in a position to assist.

Canvassing, directly or indirectly, will be deemed a disqualification.

(Sgd.) R. S. FORSTER,
Town Clerk.

Town Hall, Dyne Road, Kilburn, N.W.6.
16th November, 1949. 2758

LONDON COUNTY COUNCIL.
HAMMERSMITH SCHOOL OF BUILDING AND ARTS AND CRAFTS, LIME GROVE, W.12.

Required to commence as soon as possible a LECTURER IN BUILDING CONSTRUCTION for the Structural Engineering Course and the National Diploma Course in Building. Ability to teach Land Surveying up to the Intermediate standard of the Royal Institution of Chartered Surveyors is essential.

Applicants should be Corporate Members of the Institution of Civil Engineers and the Institution of Structural Engineers or a similar professional Institution.

Salary Burnham Scale, which ranges from a minimum of £336-£618 to a maximum of £603-£708, according to age, qualifications and experience.

Application forms from the Secretary of the School, returnable within 7 days of publication. (1373) 2793

LONDON COUNTY COUNCIL.

Hammersmith School of Building and Arts and Crafts, Lime Grove, W.12. Required to commence as soon as possible a STUDIO MASTER in the Architectural Section, capable of preparing students for the Intermediate and Final Examinations of the R.I.B.A.

Applicants should hold A.R.I.B.A. and preferably have been trained in a recognized School of Architecture.

Salary Burnham Scale, which ranges from £336 to a maximum of £603-£708, according to age, qualifications and experience.

Application forms (stamped and addressed envelope necessary) from the Secretary at the School, returnable by 10th January, 1950. (1380) 2800

CITY OF WAKEFIELD.
CITY ENGINEER'S DEPARTMENT.
APPOINTMENT OF PRINCIPAL ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment. Salary Grade A.P.T., VII (£635-£710).

Applicants should be A.R.I.B.A. and have a good experience in housing and general municipal work.

The appointment will be subject to the Local Government Superannuation Act and to the passing of a medical examination.

Candidates should state in writing whether to their knowledge they are related to any member or senior official of the Corporation. Canvassing will be a disqualification.

Applications, endorsed "Principal Architectural Assistant," stating age, qualifications, present and previous appointments, and details of experience, together with copies of two testimonials, should be sent to me not later than Saturday, the 17th December, 1949.

The Council will provide a house for the successful candidate if required.

W. S. DES FORGES,
Town Clerk.

November, 1949. 2806

BOROUGH OF EDMONTON.
ARCHITECT'S DEPARTMENT.

The Borough Council require :—
ARCHITECTURAL ASSISTANT (Grade A.P.T., VI, £595×£20 (2) and £25 (1) to £660 per annum), plus London weighting.

Candidates should be Associates of the R.I.B.A. or equivalent, and have had experience in Housing, Flats and General Building work.

Full particulars, forms of application, and conditions of service from the undersigned, to whom completed applications must be returned not later than 17th December, 1949.

H. BACKHOUSE,
Town Clerk.

Town Hall, Edmonton, N.9. 2811

CROWN AGENTS FOR THE COLONIES.

BUILDING SURVEYOR required by the Hong Kong Government Public Works Department for three years, with prospect of permanency. Commencing salary, including expatriation pay, according to qualifications and experience in the scale $1,047 a month, rising to $1,820 a month, plus cost-of-living allowance of up to $775 a month. (The Government rate of exchange is at present 16 dollars to the £, but is liable to alteration). Free passages. Candidates, not over 45 years of age, must be Chartered Surveyors, and have had at least 5 years' experience in a City Engineer's or similar office dealing with the approval of plans for the construction of building, including reinforced concrete framed structures. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/23704/3A on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration. 2810

CITY OF BATH.
CITY ENGINEER'S DEPARTMENT.

Applications are invited for the following appointments :—

(*a*) GENERAL ARCHITECTURAL ASSISTANT. Salary A.P.T., III or IV (£450-£495 or £480-£525).

(*b*) GENERAL ENGINEERING ASSISTANT. Salary A.P.T., III or IV (£450-£495 or £480-£525).

(*c*) ASSISTANT BUILDING INSPECTOR. Salary A.P.T., II (£420-£465).

(*d*) ARCHITECTURAL ASSISTANT (unestablished). Salary A.P.T., I (£390-£435).

(*e*) DRAUGHTSMAN (unestablished) in the Architectural Section. Salary Misc. I (£315-£360).

Appointments (*a*), (*b*) and (*c*) will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications, and experience, together with the names and addresses of two referees, should be sent to the City Engineer, Guildhall, Bath, not later than 17th December, 1949.

JARED E. DIXON.
Town Clerk.

City Engineer's Department, Guildhall, Bath.
24th November, 1949. 2809

THE COUNTY COUNCIL OF CLACKMANNAN.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of a JUNIOR ARCHITECTURAL DRAUGHTSMAN. Salary Grade I of A.P.T. Division of J.I.C. Scale, viz., £390 to £435 per annum

Applicants should have good general experience and must be neat and expeditious draughtsmen.

The appointment will be subject to the Local Government Superannuation (Scotland) Act, 1937, and the person selected will require to undergo a medical examination prior to appointment.

Applications, stating age, qualifications and experience, with copies of not more than three recent testimonials, should be lodged with the undersigned not later than 17th December, 1949.

N. A. SCORGIE,
County Clerk.

County Buildings, Alloa.
November, 1949. 2812

SOUTH-EASTERN REGIONAL HOSPITAL BOARD (SCOTLAND).
CHIEF ARCHITECT'S DEPARTMENT.

Applications are invited for the following permanent appointments in the Chief Architect's Department, headquarters in Edinburgh :—

PRINCIPAL QUANTITY SURVEYOR. Salary scale Grade VIII (£685×£25—£760 per annum).

Applicants must be Members of the R.I.C.S. and experienced in the administration and organisation of a Quantity Surveyor's office, in all its various branches.

JUNIOR QUANTITY SURVEYOR. Salary scale H.D.1 (£395×£15—£440 per annum).

Applicants should have passed or be at the stage of preparing to sit the Intermediate Examination of the R.I.C.S., and have some experience of the work in a Quantity Surveyor's office.

The posts are subject to the provisions of the National Health Service (Scotland) (Superannuation) Regulations, 1948, and the successful candidates will be required to pass a medical examination.

Applications, giving full details of age, education, technical training, qualifications, experience, present and previous appointments and salary, accompanied by copies of two testimonials and the names and addresses of two referees to whom reference may be made, should be addressed to R. Forbes Hutchison, Chief Architect, 6, Cambridge Street, Edinburgh, 1, on or before Thursday, 8th December, 1949. 2804

COUNTY BOROUGH OF EASTBOURNE.
BOROUGH ENGINEER'S DEPARTMENT.
APPOINTMENT OF ASSISTANT ARCHITECT. A.P.T., VI.

Applications are invited for the above appointment on the staff of the Borough Engineer and Surveyor, at a salary in accordance with Grade A.P.T., VI (£595-£660 per annum).

The successful applicant will be engaged in connection with the Council's Housing and general Architectural Programme.

The appointment is subject to the National Joint Council's Conditions of Service, and the Local Government Superannuation Act, 1937.

Applications, giving full details of age, present position and salary, qualifications and experience, together with the names and addresses of two persons to whom reference may be made, to be forwarded to the undersigned not later than Monday, 12th December, 1949.

RAYMOND WILLIAMS, B.Sc., A.M.I.C.E.,
Borough Engineer and Surveyor.

Borough Engineer's Office,
2/4, Saffrons Road, Eastbourne.
26th November, 1949. 2803

CUMBERLAND COUNTY COUNCIL.

Applications are invited for the following appointments on the permanent establishment of the Architect's Department :—

(*a*) SENIOR ASSISTANT ARCHITECTS. Grade VIII, A.P.T. Division (£685-£760 p.a.).

(*b*) JUNIOR ARCHITECTURAL ASSISTANTS. Grade III, A.P.T. Division (£450-£495 p.a.).

Applicants for post (a) are required to be Associate Members of the R.I.B.A. and capable of a high standard of design. Preference will be given to those candidates who have had experience in the control of staff.

Applicants for post (*b*) should have passed, or be preparing to take the R.I.B.A. Intermediate Examination.

The appointments will be terminable by one month's notice on either side, and will be subject to the provisions of the Local Government Superannuation Act, 1937, and to the passing of a medical examination.

Applications, on forms obtainable from John H. Haughan, F.R.I.B.A., County Architect, 15, Portland Square, Carlisle, should be delivered to him not later than Monday, 19th December, 1949, together with copies of not more than three recent testimonials.

G. N. C. SWIFT,
Clerk of the County Council.

23rd November, 1949. 2807

BATTERSEA BOROUGH COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for the following permanent appointments in the Borough Engineer and Surveyor's Department, at the salaries mentioned in accordance with the National Joint Council's Scheme.

(*a*) TWO ARCHITECTURAL ASSISTANTS. A.P.T., Grades V/VI. Salary £520 to £660 per annum, plus London weighting.

(*b*) ONE ARCHITECTURAL ASSISTANT. A.P.T., Grades II/III. Salary £420 to £495 per annum, plus London weighting.

The appointments will be determinable by one month's notice on either side, and are subject to the provisions of the Local Government Superannuation Act, 1937. The successful candidates will be required to pass a medical examination. The conditions of service are those of the National Scheme for Local Government Officers.

Forms of application may be obtained from the Borough Engineer and Surveyor, Town Hall, Lavender Hill, S.W.11, and should be returned, together with copies of three recent testimonials, in a suitably endorsed envelope, to reach the undersigned not later than noon on Monday, 19th December, 1949.

R. G. BERRY,
Town Clerk.

Town Hall, Battersea, S.W.11. 2799

URBAN DISTRICT COUNCIL OF PONTYPOOL.
APPOINTMENT OF ARCHITECT.

Applications are invited for the post of Architect to the above Council at a salary of £760 per annum.

Applicants must be Registered Architects, and experience in the design of houses for Local Authorities will be an advantage. The successful applicant will be responsible for the preparation and carrying through of all the Council's Housing Schemes. He will not be allowed to engage in private practice.

The post will be subject to the provisions of the Local Government Superannuation Act, 1937, and the National Conditions of Service. The successful applicant will be required to pass a medical examination. The appointment will be subject to one month's notice on either side.

Applications, stating age, qualifications and experience, accompanied by a copy of a recent testimonial, together with the names of two persons to whom reference may be made, should be delivered to the undersigned not later than Tuesday, the 6th December, 1949. Canvassing will disqualify.

H. COOK,
Clerk of the Council.

Town Hall, Pontypool. 2717

Architectural Appointments Vacant

4 lines or under, 5s.; each additional line, 1s. 6d.

ARCHITECTURAL ASSISTANT required in Company Architect's office in London; must be good draughtsman; salary commencing £480 to £600, according to experience. Applicants should state age, training, and experience, etc., to Box 2533.

NORTH THAMES GAS BOARD.—ARCHITECTURAL ASSISTANT required, preferably experienced in the design, alteration and maintenance of Industrial buildings and capable of preparing surveys, working drawings, details and specifications; starting salary range £480-£560 per annum, according to age and qualifications; the appointment is of a permanent nature, and pension arrangements will be discussed with short list candidates.

Applications, stating age and full particulars of training and experience, should be sent to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference 9646. 2710

EAST MIDLANDS.—ASSISTANT, Inter. Final standard, required at once for private Architect's office; work mainly domestic. Box 2463.

JUNIOR ASSISTANT required; accurate draughtsmanship and good knowledge of construction essential. Reply, stating age, experience, and salary required, to Cherrington & Stainton, FF.R.I.B.A., 2, Augustus Road, Edgbaston, Birmingham. 2647

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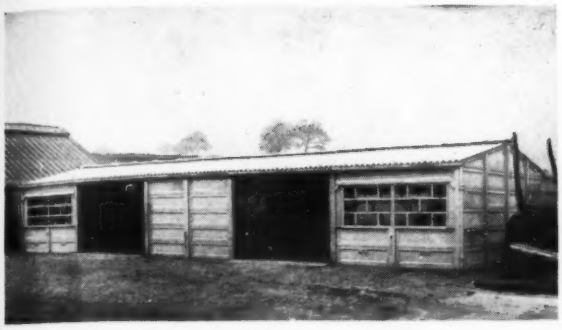


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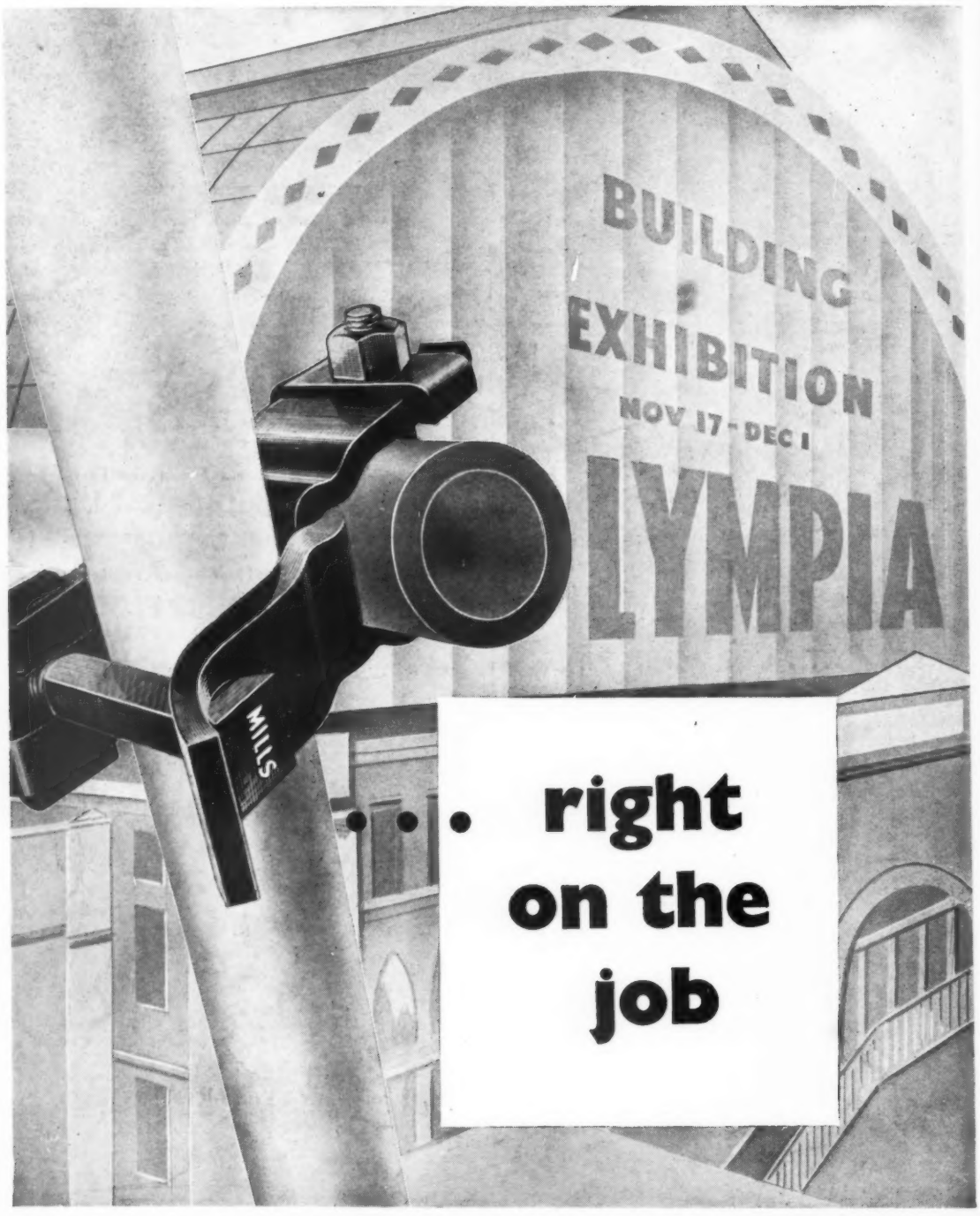
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